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The Therapeutic Value of Rest

ABOUT twenty-five years ago Hilton published a small work, entitled "Rest and Pain." A book of inestimable value, it set many a doctor to thinking. It showed how in many instances Dame Nature possesses the means of curing if not restrained by interference. From that book we date the general use of bandages and other supportive measures in treating leg ulcers, to prevent traction on the newly forming connective-tissue fibers.

The time may come when state examining boards will ask candidates about the nature and causes of pain, instead of questioning them about the commercial production of acetanilid, the active principle of croton oil, the therapeutics of rubidium, or the aerobic bacilli that become anaerobic. When they do, teachers of the science and art of therapeutics may be encouraged to go into these basic principles underlying the intelligent application of the art.

Pain in itself showed man better points for therapeutic attack, although it is that which leads patients to apply for our help. I well remember the stormy night when, after successively increased doses of morphine failed to give relief, I ventured out and reached my patient just in time to remove some adhesive straps from a "rheumatic" testicle and thereby saved him from an impending gangrene and myself from professional ruin. The instant cessation of the pain when the last encircling strap was loosed gave me a never-to-be-forgotten lesson. So, in after years, when recognizing the pangs of pressure from the pent-up pus of an abscess, an ulcerated tooth root, the blocked circulation of a hand from a malignant pustule on the arm, or in approaching senile gangrene, the therapeutics was directed at the cause of the pain rather than at mere relief.

A study of the intimate nature of pain shows that, setting aside the traumatic and certain other special forms, it is nearly always associated with spasm. Pains connected with the hollow viscera are due to spasm of the muscular fibers, even when traumatism is present. Pains of the neuralgic type are always associated with vasomotor spasm, and this element is manifest even in inflammatory conditions. The headaches of autotoxemia may be referred to vasomotor spasm induced by the irritation of the hemic toxins. The spasmodic condition of the muscular fibers in neuralgias is equally evident.

This explains why those who have investigated the nature of pain and its treatment invariably become enthusiastic over the mydriatics, dethroning morphine and elevating atropine to its sovereignty as the king of pain. Relaxation of the spasm brings relief, and atropine is a better relaxant than morphine. Besides, the mydriatics do not check elimination, lock up toxins in the system or lead to the formation of a drug habit. I have given hyoscine to a patient, who had shaking palsy, for ten years without having to increase the original dose of 1-100 grain.

Hyoscine is even better as a pain-reliever than is atropine, since the former relaxes the vasoconstrictors, while the latter stimulates the vasodilators. Hyoscine is also

directly anodyne; at least it vastly enhances the pain-assuaging power of any anodyne with which it may be administered. The best example of this is the well-known hyoscine-morphine-cactoid combination, in which the anodyne power is vastly in excess of that possessed by any one of the three constituents when taken separately. This is the most effective queller of pain as yet presented, greatly excelling the popular chlorodyne, although combined along closely similar lines.

I have recently experienced the remarkable power of this excellent combination in relieving post-operation pains. Having had a tooth extracted, a root was left that resisted a ten-minutes' effort on the part of the leading Chicago specialist to extract it—for nine minutes of which I was out from the gas-anesthesia. The pangs became unbearable, until a half-strength dose of the sedative combination quickly and permanently subdued them.

Frequently, however, there are grave objections to the use of morphine in any dosage; and when the pain is spasmodic we may properly omit the opiates. Directing our efforts at the spasmodic factor, we think of glonoin, the quickest and most powerful of relaxants. The extremely evanescent effect of this agent may be prolonged by the addition of atropine while its action is still further enhanced by associating strychnine. Not that the latter is in any sense anodyne, but, by stimulating the nerve-centers, it increases the vital reaction with any drug simultaneously administered.

The foregoing association of drugs gives us one of those triad combinations of which the effects are so powerful as sometimes to engender a little superstitious sentiment: the most famous prescription of ancient times and the most successful ones of today contain each three potent ingredients.

Sleep is so unavoidable that when it is absent there is always an appreciable cause. The height of folly lies in ignoring this fact and to endeavor by crowding hypnotics, to smother the voice of nature calling attention to a definite peril.

One of the most beautiful examples of really scientific therapeutics is to give digitalis when insomnia depends upon cerebral vasomotor paresis, associated with weak heart. Digitalis tones the cerebral vessels so that they resist the influx of blood when gravity favors it, and sleep ensues. How many sudden deaths, how many incurable central affections might not be averted were each instance of insomnia traced to its cause.

In a suggestive article printed in *The Therapeutic Gazette* for February 15, that accomplished clinician, Otto Lerch, of New Orleans, calls attention to the vasomotor conditions involved in rest. This paper is notable in that it is probably the first time this fundamental condition has been studied. It also emphasizes our own condition of the far-reaching application of the vasomotor relaxants, and their beneficial influence over nutrition.

In truth, as Lerch says, "Rest in the recumbent position is the most powerful prophylactic and therapeutic agent we possess." The slowing of circulation and respiration, as well as the general relaxation, allows engorgements to subside, the surplus blood drains away into the general circulation, and equilibrium is restored.

The problem of rest for a suffering part is a complex one when we are dealing with a vital organ. The inestimable value of Weir Mitchell's skim-milk diet in the nephritides is obscured by the failure of most doctors to comprehend that milk has not a particle of curative value. The essence of the method lies in the diet sustaining life, while securing physiologic renal rest by abstinence from all other food.

In pleurisy, we put the thorax in splints in order to rest the inflamed parts. In neuralgia, we combine rest with massage and faradism. In enteritis, we splint the bowel with opium. In every instance we seek to secure freedom from motion for a part disabled by disease, so that the healing processes may have a chance.

Everybody knows—and some very few do obey—the law that prescribes a period of rest to the digestive apparatus, after its duty has been performed. It is one of the wonders of nature that our stomachs so long withstand the abuse we inflict upon them.

The question of rest to the man who approaches old age is so important that I have treated it separately in another article. But there is one more aspect of rest to which some consideration must be given, and that is, its abuse. I wonder that some devotee of golf has not sought to connect the spread of that infection among the wealthy with the development of powers of the human brain, as shown in the stupendous aggregations of capital and power in recent years. The billionaire plays golf—*ergo*—?

A writer in *The Lancet* asserts that the exercise of the arteries consequent upon varying states of physical rest and activity, of satiety and hunger, is essential to their

wellbeing; and that the scleroses of age are due to the lack of such exercise as will alter frequently the caliber of the vessels. Lacking this, they lose dilatability and contractibility, and the victim begins to realize that he is "as old as his arteries."

The Greek abhorred fatness, as offending his esthetic sense. We who would prefer living in health and usefulness to ninety, instead of dying from old age at sixty, dread undue corpulence as threatening our hopes of longevity. Yet, it is safer than undue thinness, according to the actuaries.

Rest! Forgetfulness! Nepenthe! Oblivion! Unconsciousness! For this the drunkard craves; for this the narcomaniac surrenders all else life proffers of desirable. For this the smoker turns to his weed. For this the Oriental finds solace in hasheesh. To shut out the cares and sorrows of humanity, the world and its disappointments, to float away on a dreamless sea into unconsciousness, is the longing of humanity, without once realizing that the final crowning consummation of the wish is Death.

If you have built castles in the air, your work need not be lost; there is where they should be. Now put foundations under them.—Thoreau.

SAUL ALSO AMONG THE PROPHETS!

It is a common matter of history that every worth-while movement is destined to pass through three stages, which succeed each other with unfailing regularity. First there is the period of ridicule, when the innovation is looked upon as a joke (a poor joke, at that) and its author as a misguided idiot, and the mere mention of the subject brings a contemptuous smile to the complacent lips of smug conventionality.

And the movement keeps on growing!

Next comes the period of attack and opposition. Smug conventionality begins to lose its complacent sneer and to grow uneasy. Constituted authority looks askance at the threatened disturbance of its dignified repose and frowns its displeasure upon the innovation. It says: "This impudent thing is becoming annoying; we will take an afternoon off and annihilate it." Finding that the "thing" is not killed so easily, constituted authority forgets its dignity and waxes very angry, not to say excited, shrieks loud and frantic warnings against the "menace" of the innovation, and puts in motion every engine of prejudice and passion, prestige and politics, to compass its destruction. All of which, while it puts the new movement to a most severe and trying ordeal, seems after all to be a wholesome process, upon which it actually thrives and strengthens.

And the movement keeps on growing!

Last comes the era of triumph, when at length the new movement justifies itself, and stands vindicated by the very agencies that opposed and fought it. And this is the strangest phase in all its strange, eventful history. For how, and in what fashion, does this vindication come? Is there, by any chance, a public acknowledgment of the wrong, and an equally public crowning of the right? Does constituted authority, think you, gracefully admit its error, and graciously speak up: "We have misunderstood and misrepresented this man and his movement; now we will make amends; sit thou on our right hand until we make thine enemies thy footstools"? Not that history ever recorded. Nor must any innovator ever look for such a denouement. Whatever triumph he experiences must be in his own soul.

This is the way of it. When neither ridicule, nor suppression, nor opposition is found sufficient to hinder the growth or prevent the final triumph of the new movement—as neither will, if the new movement be grounded in the truth—when it becomes evident that the new movement, now new no longer, will inevitably take its place among the accepted institutions of the day; then constituted authority, with characteristic assurance, coolly appropriates the victorious propaganda, stamps it with its own insignium, and, with hand on heart, smilingly receives the plaudits of the admiring crowd.

What is the occasion of this little outburst of philosophy? For answer, we refer our readers to an editorial in *The Lancet* for March 28, entitled "The Relation Between Galenical Preparations and Their Active Principles," which we have reprinted on another page in this issue.

Well, well, there is no use in complaining, and we solemnly declare that there is not a trace of bitterness in our philosophic homily. We are merely consoling ourselves with the reflection that we are not the first—nor shall we be the last—to undergo this rather anomalous experience. And, after all, there *is* a good deal of genuine, inward elation in the tardy recognition, from such a quarter as the British Pharmaceutical Society, endorsed by such a journal as *The Lancet*, of the pharmacological principle which we enunciated as the basis of our campaign more than twenty years ago, and for which we have persistently

and consistently fought, in the teeth of ridicule and authority and opposition, through all the intervening years.

Whatever may be the detailed pros and cons of Dr. Jowett's momentous communication, discussed by *The Lancet* in the editorial referred to, it is, upon the whole, a triumphant vindication of active-principle pharmacology and therapy, from what is perhaps the most conservative source in the world. As such we soberly accept and promulgate it. We have no idea of going into ecstasies over it. Whatever justification and credit it reflects upon us and our work is ours by simple right. And especially such justification and credit belongs of right to the principle for which we have stood.

This utterance of Dr. Jowett's indeed, is but the beginning of a tribute of unreserved assent which must, and will, ultimately establish a principle so reasonable.

Amidst applauding cheers, I won a prize.
A cynic watched me, with ironic eyes;
An open foe, in open hatred, sneered;
I cared for neither. Then my friend appeared.
Eager, I listened for his glad "Well done."
But sudden shadow seemed to shroud my sun.
He praised me; yet each slow, unwilling word
Forced from its sheath base Envy's hidden sword.
Two-edged, it wounded me; but, worst of all,
It thrust my friend down from his pedestal,
And showed him as he was—so small, so small.
—Ella Wheeler Wilcox, in National Magazine.

THE TOXEMIAS OF PREGNANCY

We have repeatedly expressed our belief that the toxemia of pregnancy was largely due to fecal retention and absorption. We have never said or believed that this was the only factor of this group of maladies, but called attention to it especially because we knew it to be frequent and too generally overlooked. Moreover, no treatment can be considered satisfactory that does not begin with complete emptying and disinfection of the alimentary canal, if it needs it—as it usually does. But there are other considerations, and the group of maladies embraced needs study as a group rather than as a single disease.

The future may show that the secretions of the ductless glands are involved. Glycosuria is sometimes to be attributed to hypersecretion of the pituitary body, at other times to true diabetes or to the failure of the liver to store glycogen. In the latter case, we have toxemia, headache, neuritis, muscular twitchings, etc., most of which we may attribute to fecal toxemia, since it subsides when the bowels are emptied. Vomiting of pregnancy is always to be looked upon as pathologic and requiring treatment. Glycosuria disappears when the patient is placed upon a diet free from meat. Even the mildest cases may later develop into more serious forms.

On the other hand, one need not err by attributing everything to toxemia. Vomiting of pregnancy has been stopped by applying iodine to the uterine cervix, and also by dilating the latter; and when fissures of the cervix are found, any curative measure applied locally will also cure the vomiting.

PLAGUE PROPHYLAXIS IN CHINA

A German navy surgeon tells how he kept the plague out of Kiaochau, the Teutons' look-in in China. The boundaries were guarded by a barbed-wire fence with 300 men back of it; the water-front, by guard-boats and searchlights. But one opening for admissions was left. At the market buyers and sellers were separated by two wire fences five feet apart. All incoming travelers were examined at quarantine and detained under observation for five days. Trusty persons then admitted had to report daily for five days more. Doctors, attendants and sextons were protected with motor-goggles, cotton-masks over the nose and mouth, a hooded suit with gauntlets, and long boots. On leaving the ward, a spray of sublimate solution was applied and the clothes were well brushed. The suit was then shed and soaked into an antiseptic lotion. Then he was allowed to go free.

ANTINARCOTIC LEGISLATION

There is urgent need for legislation to curb the growing use of the habit-forming narcotic drugs in this country. We have repeatedly called attention to this matter, and have recommended that every physician do all he can to bring about the passage of proper laws designed to curtail this dangerous traffic.

Last month we gave a digest of a bill drafted by the National Drug Trade Conference at its last session in Washington, a bill which seems well adapted to secure the desired results. If passed, the law would involve a certain amount of hardship to the medical profession. Thus, every doctor would be compelled to take out a federal license and pay an annual fee of one dollar. He would be subjected to inspection by government officers, and, if his purchases of

morphine, cocaine or their congeners and compounds were large, he might be called upon to explain. However, the decent members of the profession necessarily must be prepared to submit to some inconvenience that the few scalawags may be hunted down and driven out of business.

Therefore, again we urge every reader of this journal to accept this bill, and all similar state bills, which he knows to be right, working for their passage and tendering all possible assistance in their rigid enforcement.

Yet, while we approve of proper antinarcotic legislation, we must warn you that insistent efforts are being made to hang upon these bills certain provisos, so cleverly worded that their meaning and intention may be obscure to the casual reader, the effect of which would be to strike a bodyblow at physicians, and especially at those who dispense their own medicines. When such "jokers" are uncovered their advocates defend them with a casuistry that may be convincing to any person who cannot see through and beyond the specious reasoning that the real purpose of these cunningly framed sections is to "get" the doctor who dispenses his own remedies.

For instance, since the Drug Trade Conference bill was framed, with the complete concurrence, as regards all its details, of fourteen out of the fifteen delegates, the proposal has been made to amend it by a clause that would require every dispensing physician to keep a record, not merely of his purchases of remedies containing narcotics (as the bill now provides) but also of all these drugs and all their mixtures and compounds that he may administer or dispense. Every cough tablet, every diarrhea tablet, every dose of "cholera mixture," every hypodermic dose of morphine would have to be recorded, and the doctor would be involved in a burdensome detail, the neglect of which might involve him in prosecution by the government, and which surely would mean more or less persecution by unfriendly individuals in the drug trade.

Similar antinarcotic bills have been introduced in a number of states—for instance, in Indiana, Illinois, Iowa, Michigan, Florida, Nebraska, and Texas. The peculiar thing about them is that they all have this "joker" in them. As will be readily understood, the purpose of all these special provisos is to make dispensing by the doctor uncomfortable if not dangerous.

Our advice to you is to—watch them! Go a step further, and help frame up really effective antinarcotic laws—laws that are absolutely fair to *every* party concerned—druggist, doctor, and the public—and take off your coat and see that they are passed. Here is a work that is worthy of the interest and the action of every county and state medical society in the country.

We want a model law, not a law that has been "fixed" in the interest of any person or any class of men. The medical profession will not object to carrying its full share of the burden, but it does object to be being made the "goat."

We shall be very glad if such of our readers as have given or will give this matter special thought will submit to us drafts of really model antinarcotic laws. Do not do it hastily. Get copies of the bills that have been submitted in legislatures, give them careful study, and then let us see what we can work out. We want to hear from you.

If you are going to keep ahead of your competitor you must read and study. You have already forgotten more than you remember of what your college professors taught you. You can only keep up your efficiency by reading.—The Willows Magazine.

LATIN-AMERICAN POLITICS

Our difficulty in dealing with our Spanish-American neighbors is, that we persist in looking upon them from our own standpoint instead of from theirs. The Anglo-Saxons came to the New World in search of freedom; and with the purpose of founding here their homes. The fortune-hunting American Spaniards had no other thought than that summed in the one word—loot. From Cortez and Pizarro, Alvarado and Balboa, to many of their latest descendants, this ideal has prevailed.

The game is perfectly clear and easy to comprehend. The robber-chief fights his way to leadership and seizes the reins of "government." While in office he amasses a fortune and places it securely in the banks of Europe. When he has gathered enough the next leader arises, and the deposed "Presidente" makes his getaway and proceeds to live happy ever after on the spoils of his plundered country. Usually the thing is a "put-up job," the retiring and incoming leaders understanding each other perfectly, no obstacle being placed in the way of the former's safe retreat.

The cry of the rebel is always "liberty" and reform. This sounds well and always appeals to the big fellow north of the Rio Grande. It has no meaning whatever to the native. He is interested, because he expects to share in the

rewards, or to be plundered to supply them. The few really patriotic citizens are lost in the undeveloped multitudes.

Costa Rica stands out as a notable exception. A true republic, for many years she has been ruled by officials elected by a majority of her citizens. Prosperity has prevailed and property is worth far more in Costa Rica than in any other of her sister states. In return for this, she is looked upon with supreme contempt by others. Under the wise administration of President Cabrera, Guatemala also has developed a clean and efficient government, and her people are making great progress, in spite of her debt-contracting proclivities.

Naturally, the revolution-making brigands wish to be let alone. Any attempt on the part of the United States to intervene in behalf of decency and right is met with the allegation that we seek to absorb their country. Except the robbers themselves, everybody concerned would be only too glad if we did; and the simple rumor that such a step was contemplated would send values in a given state a kiting. But we are so fearful of being suspected of interested motives that we "fall" for the plea and allow disorder and riot, bloodshed, and looting to go on unchecked.

Quite naturally the leaders in many other Spanish-American states sympathize with the Mexicans. They are in the same boat. How many of these "republics" are governed today by the leaders of successful "revolutions"? Name those in which three successive presidents have been elected by the people.

With Madero the case was different. He had his millions already, and he was an honest, really patriotic man; so he failed to play the game under the ordinary rules, did not make a "getaway," and was shot.

It is time we began to realize that we have duties toward our neighbors, and that there are considerations higher than the question of "what the people might think."

Serve notice on these states that disorder and looting must cease and the will of their peoples must rule. Tell them flatly that if they can not govern themselves we will. Do as we have done with Cuba. Give the patriots every chance to accomplish their work, and give them time to establish systems of general education. Let industry revive and natural resources be developed under the rule of enforced order. The scars of war would soon be hidden by the plenteous results of industry and peace. Then, if the people did not realize their blessings and that they were worth preserving, it would be high time for some other power to step in and do the governing.

Read Dr. Hollman's article upon the Mexican situation, printed in the Miscellaneous Department. It will help you to understand the chaotic condition south of the Rio Grande.

The secret of success is constancy to a purpose.—Disraeli.

A PERSONAL LETTER—JUST A REMINDER

Dear Doctor: Please consider this a *personal* letter. I know you want CLINICAL MEDICINE and will not willingly miss a single copy; but you haven't told me so—and your subscription expired two (or was it three?) months ago. Won't you write at once and let me know your wishes?

If convenient (and I hope it is) enclose the amount due. But should it be difficult to get your hands on the necessary two dollars immediately, let me know that, and we shall be most happy to give you additional time. The essential thing is to let me know.

Haven't you medical friends who would enjoy CLINICAL MEDICINE? I am sure you have. Wouldn't you like to help *one* of these to get acquainted with it? You can do so without expense to yourself. If when you send in the two dollars for the renewal of your own subscription (or for a new one, if you are not already a subscriber) you will give me the name and address of that friend you can present him with a year's subscription, with your compliments. Don't forget to send me his name.

I shall expect to hear from you next week. Please do not disappoint me.

Fraternally yours,

W. C. ABBOTT.

TETANUS!

Of course this warning is superfluous—you know all about "lockjaw"; you know how likely it is to occur after Fourth of July wounds; you know that any punctured, lacerated, ragged or contused wound of the skin, exposed to contact with street dust and liable to pus infection, supplies the exact soil necessary for the multiplication of the tetanus germ; and you know that *tetanus, once developed, usually kills.*

Of course you know all this, and I do not need to deliver a homily on the dangers of the

toy pistol or the rusty nail. But do you keep sufficiently in mind the methods of preventing tetanus? It can be prevented, and the doctor who does not use the proper prophylactic methods, in cases where there is any possibility of the development of this terrible disease, is certainly culpable.

Two things you should do when called to treat a suspicious wound:

First, see that it is open to the air and free drainage secured; under no circumstances apply an impervious dressing.

Second, give tetanus antitoxin, 1500 to 2000 units. Don't wait for premonitory symptoms. Give it at once. Your pharmacist should keep it in stock, but if he doesn't, have a supply of your own for emergencies. With most manufacturers it is exchangeable.

If every physician would attend to these two simple precautions there would be no tetanus, except among the unwise persons neglecting to call a doctor.

THE PRACTICE OF MEDICINE—IN 1924

A recent number of this journal contained a communication in which its writer traces my editorials suggesting a new relation of the profession with its clientele to the socialist movement. If this be correct, it is an instance of how a sentiment gets to pervade a community without consciousness of it. I am no socialist; I have given too little attention to the socialist movement. Yet, my own observations and deductions have led me to advocate a change that is in line with their ideals.

My conclusions are based upon the facts that the American people require far more of the medical profession than does the European peasantry; that men can not afford to be disabled by illness, in view of the pressure of the present struggle for existence; that the time has come for the practical application of that preventive medicine that has been so long the theme of the essayist; and that the way to reform is to reform.

I am far from taking credit for priority in inaugurating this movement. It is one of those inevitable things that must occur to the minds of many men simultaneously, for the concatenation of circumstances that develops the ideal in one must do so with others. But innovations are sure to shock the sentience of some, and to arouse opposition. How well the early advocates of the "modern germ theory" were verbally trounced for pushing their idea to absurdity; and, yet, now there are apparently no limits to its application.

That the change suggested is "in the air," may be inferred from such publications as that of Doctor Richard Cabot, quoted by *The Boston Post*. Speaking on "Pressing Problems of Public Health," Dr. Cabot said that at the University of California 7000 students were taken medical care of in ideal fashion at a small hospital. For group diagnosis and group treatment each pays $5.00 a year, making $35,000 annually for the entire student-body. From this sum the attending doctors are paid "good salaries." That must mean more than the average income of the American doctor, for he collects only about $700 a year—and that is not a good salary.

Dr. Cabot goes on to say that "preventive medicine is the only way really to check disease;" and he suggests that at present we make diagnoses of the ailments of the school-children but do not treat them. "It is like aiming the gun and never firing."

Surely! But why stop with the children? Why not take in the working men? The whole community? Why a level rate of $5.00 each, when some can pay more and, still, not feel the payments a burden?

Apply this matter individually. Sit down and calculate your clientele, divide them into classes, as each is able to pay, from ten cents to one dollar, or even more, each month; and see what your settled salary-income would be were they to agree on such a compromise. You will be surprised at the result. Then talk the matter over with them. Most people would willingly pay a small monthly sum as an insurance against doctor-bills. Place your business relations on such a basis, and you may then begin to practice preventive medicine, writ with big capitals.

Don't hunt after trouble, but look for success;
You'll find what you look for; don't look for distress.
If you see but your shadow, remember, I pray,
That the sun is still shining, but you're in the way.
Don't grumble, don't fluster, don't dream and don't shirk.
Don't think of your worries, but think of your work.
The worries will vanish, the work will be done;
No man sees his shadow who faces the sun.

INTESTINAL STASIS AND AUTOINTOXICATION

The noted English surgeon Dr. W. Arbuthnot Lane said recently in a clinical lecture on chronic intestinal stasis, which was printed in *The British Medical Journal*, May 4: "It is only the other day that most of the leading physicians in Great Britain scoffed at intestinal stasis and autointoxica-

tion and their results. Now, on the other hand, the progressive scientific observer has recognized autointoxication as an important—if not, perhaps, the most important—factor in the production of disease."

Doesn't that doctrine sound familiar to readers of CLINICAL MEDICINE?

Life is not so short but that there is always time enough for courtesy.—Ralph Waldo Emerson.

THE PREVENTION OF TYPHOID FEVER

In one of its excellent *Bulletins*, the Illinois State Board of Health gives the precautions recommended to prevent the spread of typhoid fever. Here are some extracts:

"The war against typhoid fever must be fought at the bedside of the patient." Surely, since the germs of the infection are given off in the discharges from bowels, bladder, nose and mouth. So that these excreta must be so disinfected as to destroy the infecting germs before they leave the sickroom. We would go a step further and destroy them as largely as possible before they leave the patient, but the profession has not as a body realized the importance and the possibility of this as yet. However, we may rest content to have this maxim acknowledged, that if every doctor were to see that every typhoid discharge were really disinfected that disease would soon be wiped out of existence.

"Typhoid fever is in all cases caused only by the germs being swallowed. It is caused in no other manner."

"Infected water is the chief source of typhoid."

"Milk infected with typhoid germs is also an important means of carrying the disease."

"Flies also spread typhoid fever."

"The disease may be conveyed by the person attending the sick."

"Typhoid carriers may scatter the disease."

"In this work, Boards of Health can do little, unaided by the family physician. Upon him rests the responsibility of seeing that thorough disinfection is carried out in every case of typhoid fever he may be called on to treat."

Very plain, sensible expositions follow upon water, flies, milk, and other foods; also a brief statement in regard to antityphoid vaccination. Details are given of the technic necessary to stop the spread of infection. "Every case of socalled typhomalarial fever and every fever of doubtful origin continuing more than seven days, should be reported and the same precautions taken." For fumigation the permanganate-formaldehyde method is recommended and well described.

The same *Bulletin* contains the official rules of the Board concerning the prevention and suppression of this fever, extracts from the laws bearing on this subject, sanitary advice for summer tourists and keepers of summer resorts by Dr. Rucker, Major Russell's statement of the results of antityphoid vaccination, and some aphorisms on the fly.

We do not give this valuable *Bulletin in extenso*, not because it does not merit the space but because copies may be had for distribution by applying to Dr. Egan, secretary of the Board.

Yes, every word of this is an old story, and well known to every reader. Why do we give it space then? Because typhoid fever still exists; and the only reason for its continuance is the neglect of physicians to act upon the knowledge herein given. We must keep at it until every member of our profession has been aroused to his duty.

THE NEW "PREDESTINATION"

A friend of mine, the other day, expressed to me a fear that, I confess, had more than once haunted my own mind, and which doubtless has whispered itself to many other thinking men: the fear that the doctrine of heredity, as science now teaches it, will paralyze faith, deaden enthusiasm, crush effort in the individual man.

If, as the modern science of heredity asserts (and seemingly rightly asserts), a man is hopelessly and inescapably hemmed in, circumscribed and limited by the elements of his germ-plasm, what is to become of his faith in himself? If science is to give us back, in terms of biology, the old bugaboo of predestination which theology once fastened upon us in terms of religion, what is to become of free will—not the theological *doctrine* of free will, but the practical vital *power* of free will, the belief in one's ability to rise above birth and circumstances and to conquer them—by which all things were made that are made?

This is the spectre that is staring every thoughtful man in the face, and it must be squarely met and reckoned with. Science has a cold-blooded, remorseless way of pressing home its truths, regardless of their effect, and we who stand for the human side of life must accept them without wincing, and humanize them as best we may. We cannot

evade them or sidestep them, as the old theologians used to do, by sheer denial or by weight of ecclesiastical authority; and, indeed, experience ought to have taught us by this time that truth, scientific and otherwise, however formidable or threatening its aspect, is never destructive, but always constructive, and needs only to be put in its proper viewpoint to display its humanizing value.

So, in this matter of which I speak, the wise man will not attempt to escape pursuit by the foolish plan of hiding his head in the sand, but will stand his ground and meet the issue. The question, at all events, is a real and serious one, whatever may be true of the problem it contains.

How shall we tell a man that his physical and mental and moral life are bound up irrevocably and unalterably in his ancestral heredity, his temperament unchangeable, his entire career, almost down to its minutest details, marked out and limited for him; that even the character and career of his children are hopelessly predetermined by his own parental influences? And then, in the next breath, how can we consistently bid him strike off the shackles that bind him, bid him come out of the grave-clothes of superstition and be a free man? Nay, more than that, in the face of such a hopeless doom, how shall we even arouse him to do what may be done within the narrow limits of that doom?

Now let *us* do the looking in the face. Suppose some one should say: "It is true that every man and every woman in the world must die; but we may not proclaim this truth to those who eddy round and round—nay, only to the elect few whose minds are strong enough to bear the shock must we confide the truth."

Here, I think, is almost a parallel case. Every human being lives momentarily under an indeterminate sentence of death. Man knows not just when the ax will fall. He does know, though, that, without a doubt, it *will* fall. Indeed, this is the one thing in his life that he knows for certain. It is the one inescapable doom that comes alike to him and every human being.

Yet, I venture the assertion that, barring a few of morbid temperament, no thought or word or deed in any person's life is influenced in the slightest degree by the knowledge of this "sword of Damocles" ever hanging over his head. The fact of the matter is, so far as his own inner life and conduct are concerned, no man believes in death, except for others. He himself is never going to die. This is nature's wise provision against the paralyzing, enervating effect of his knowledge of death.

Nor is that all! By his persistent refusal to entertain a belief in death he is actually able to oppose to death itself a set of forces which to all intents and purposes conquer and destroy death. And, so, while death itself, as a physical occurrence, remains an unalterable fact, the *fear* of death and the *influence* of death are but disembodied spectres into whose eyes men have learned to look and laugh.

I think the same thing will prove true in regard to this awful spectre of heredity. The fact will be that the average man, however his *intellect* may assent to the startling truths of biology, will not in his *heart* and *conduct* vitally believe them. I mean, that they will not consciously influence his thoughts or words or deeds, any more than the advice and experience of the older man influences the enthusiasm and ambition of the red-blooded youth.

Teach a man's *brain* ever so conclusively that his life is bound in impassable limits, his *heart* never will believe it; and, perhaps—who knows—in this, as with the fact of death, his vital disbelief may set up a real and powerful train of forces the ultimate effect of which will be to vanquish, and even to cancel, those influences of heredity which science declares to be irrevocable.

The practical lesson for us who deal, not only with sickness, but with sick people, is, that, while we reverence these inviolable truths of heredity and guide ourselves by them, we need not and must not permit them to make us fatalists. After all, there are other forces in life besides heredity. And it is with these benign forces that the physician must align himself.

However fixed or irrevocable the biological aspects of disease may be, it is the business of the physician to war upon it unceasingly in its clinical aspects, just as we do upon moral evil, in spite of the "Q. E. D." of philosophy that moral evil is inherent.

There is a cross and a redemption in science, as there is in religion; and, *in hoc signo vinces!* There really is nothing more blighting to progress and endeavor in the phenomenon of heredity than in the phenomenon of death. Sooner or later, paraphrasing the defiance hurled at that arch-enemy who stands at the end of life, it may come to pass that, perhaps, we shall boldly cry out to that implacable doom that stands at life's portal:

"O heredity, where is thy sting? O chromosome, where is thy victory?"

Nobody who cannot speak the common thought, who does not move by the common impulse, is the man to speak for America, or for any of her future purposes. Only he is fit to speak who knows the thoughts of the great body of her citizens, the men who go about their business every day, the men who toil from morning till night, the men who go home tired in the evenings, the men who are carrying on the things we are so proud of.

—Woodrow Wilson.

SUMMER IS COMING. PRIZES

Yes, summer is coming. So are the summer diseases, and we should be discussing them. The purpose of this brief editorial is to persuade as many as possible of our readers to send us *at once*, for use in the July, August and September numbers, short items giving experience in the treatment of hot-weather ailments.

We do not want "articles"—that is, not particularly, though if you have something good we want to see it. But we do want as many as possible to tell us in fifty to two hundred words (of course you may take more if you need to) just how you treat such common things as infantile colic, diarrhea in babies, cholera morbus in the older members of the family, indigestion, acne, snake-bites, mosquito-bites, lockjaw, urticaria, intertrigo, sunburn, malaria, teething—in fact, anything that may occur during the heated season.

Just to make it interesting we will give prizes, of $3.00 for the best item, $2.00 for the second, and $1.00 for the third; these to be awarded during July, August and September. Every other physician sending us an item that we can use in this symposium will receive a valuable book—worth from 50 cents to $1.00.

Everybody is invited to participate in this symposium—non-subscribers as well as subscribers. "Come on in, the water's fine!"

FATIGUE-POISON

The ever-ready quack seizes upon this matter of fatigue-toxins and makes of it an appeal to the public to seek his aid. Hear: "Fatigue means poison. Every muscular and nervous impulse causes the burning of vital fuel, and the ashes resulting are carbon dioxide, a deadly poison. Fatigue is simply an indication of an excess of this poison in the system."

This clears Weary Waggles, Dusty Roads, and the whole fraternity of modern peripatetics, and the holdups and get-rich-quicks, and all the gentry who seek to exist and enjoy without work. Just rest; and when the old woman falls under the weight of fatigue-toxins, get another wife!

THE CURABLE FORMS OF ANGINA PECTORIS

What is angina pectoris? In truth, nobody knows. If one doubts this, he has only to review the pathogenic theories upon this malady. Neuritis of the phrenic nerve, neuralgia, coronaritis, aortitis, intoxication, distention of the left ventricle, all these, and many more, have been invoked by the pathologists. But, neuritis one has not always found, neuralgia is not anatomically recognizable, narrowing of the coronaries and aortitis frequently exist without a concomitant angina, of all the intoxications there is only the tobaccic that causes anguish, and they are not in accord as to distention of the ventricle.

Fiessinger divides anginas into six categories: Angina by coronarities, angina of aortitis, of myocarditis, of interstitial nephritis, and of the obese and the aerophages. However, the accuracy of this division imports little; what interests us is the therapeutics it initiates.

Fiessinger studied 80 cases, and he says: "All these offered the primordial character of angina-pectoris provocation of the pain and the sense of anguish under the influence of walking or of effort. An angina where the pain and anguish awaken under walking or violent muscular contraction announces a myocarditis of the left ventricle. At the moment when fatigue lowers the faculty of vanquishing peripheral resistances the crisis declares itself. But a great number of patients with insufficient myocardia do not suffer from this pain. A nervous element must intervene, which can be brought into play by causes—toxic, infectious or moral—which must not be neglected. Patients must then be protected from emotion, from fatigue, and be examined carefully for reference to a thermal station."

In the treatment we may consider: (1) medication, general and particular, and (2) the therapeutics adapted to each case.

The general treatment consists of the administration of the nitrites—amyl nitrite by inhalation, tetranitrol, glonoin (3 or 4 drops daily of a one percent solution), and morphine, 1 milligram every three hours, in the subintrant crises. To this add prolonged rest in bed and a special diet.

The patient should take a small meal every two hours, to avoid stomachal distention and to reduce to the minimum the work of the stomach. After 8 a. m. give, every two hours, 60 to 80 Grams of legumes or pastes, with 60 Grams of hot water; sugared things, fruits, cacao and milk, chicken, tender meats, according to the state of the kidneys. Hot water follows each plate of solids. Except in the subjects of syphilitic coronarities, the amelioration is immediate.

Coronaritis, like aortic insufficiency of arterial origin, almost always is recognized as of syphilitic origin. Always institute the Wasserman test. When positive, if the treatment is instituted in good time, the cure may be obtained in nearly every instance by effective treatment (some form of iodine), insisting upon rest at the same time.

In the myocardites, the anginous pain ceases when the heart dilates. This is a general fact, but not absolute. Rest is here a great factor in amelioration. Use also digitalin, 1-10 milligram three or four times a week, and theobromine, in doses of 1-2 centigram, twice a day, for a period of ten days. Treat also the nervous system.

In interstitial nephritis, the lactovegetarian diet, the system of small meals, rest in bed, with digitalin and theobromine administered as above stated, promises rapid relief.

Note this: If the patient by any effort comes to dilate the auricle, the angina disappears and there appears the murmur of functional mitral insufficiency.

The obese and aerophages usually are cured. This occurs especially—and remarkably quickly so—in the obese. As the emaciation cure makes them lose weight, the anginous accesses become less frequent and finally cease. Then combat the obesity by an appropriate diet, give theobromine for a period, and the cure, often definitive, is only a question of time. This is the case even when interstitial nephritis is also present, but here it is necessary that the patient should be prudent and shun all violent effort that might induce a crises, which might prove mortal.

The aerophages are nearly or always the young anginous. Every man under 45 years who is not syphilitic or aortic and who has dolorous crises provoked by walking may almost surely be considered an aerophage. Dyspeptics not infrequently have neurosic anginas, while the aerophages have crises of true anginous type, aroused by walking, the diaphragm displaced by gas hindering the cardiac functionation. In these two forms it is diet we must prescribe. The system of small meals is very efficacious, associating sodium bicarbonate and absorbent powders. Any other medicament is useless, if not injurious.

Every patient affected with angina pectoris, even the true form, can be cured, and this is a consoling thought. The unsatisfactory feature is the duration of treatment, since it may require from fifteen months to three years. The older the patient, the more certain the cure—we always cure them after seventy years.

Let us strive to live worthily, to do honest work for an honest wage where a wage belongs; but never forgetting that oftentimes the work which is best worth the doing, most profitable to us as well as to the world, carries with it no money wage.—Dr. F. C. Shattuck, in The Boston Medical and Surgical Journal.

PLEURISY IN CARDIAC SUBJECTS

Cruchet and Lautier have recently studied cases of pleurisy in cardiac subjects and report their observations in *Le Monde Médical*. They divide them into three groups:

1. In this group the pleuritic attacks occur in a healthy person and occasion disease of the heart, inflammatory or obstructive.

2. Persons whose hearts are already affected are attacked by pleurisy. The result depends on the degree of injury already sustained by the cardiac muscle. If this is slight the course is similar to that of pleurisy affecting healthy individuals. But, if the heart's force has already become impaired, the sudden additional strain may be beyond its ability to sustain, and the embarrassment, aided by the effusion, aggravates the suffering and the danger.

3. The heart disease may be the cause of the pleurisy, as when an acute endocardial inflammation extends to the pleura, directly or through embolism, or when in chronic cases the congestion affects the histologic elements of the pleura as well as those of the lungs. Such a condition offers a nidus well suited for tuberculous infection. Here also embolic infarctions may occur, septic or becoming such later.

The attack may be acute and open, or latent, the former indicating infarction. The signs and symptoms are those of noncardiac pleurisies except that the functional disorders are apt to be more pronounced as the heart disease aggravates them.

Much is to be learned from a study of the effused fluid. This is usually of a lemon-yellow color, of high specific gravity, and rich in fibrin and albuminoids. Its cytologic

formula shows polynuclear cells or lymphocytes, with a few endothelial cells, the latter never in groups. The one invariable characteristic is Rivalta's reaction, always positive with inflammatory exudates: Into a test tube containing 50 Cc. of ordinary water pour a drop of an aqueous solution of anhydrous acetic acid, 1 in 2; after shaking this test solution carefully add a drop of the fluid to be examined. If inflammatory it gives a number of bluish-white opaline striæ, which slowly settle to the bottom of the tube. These resemble smoke spirals from a cigarette. If the fluid is merely transudative, as in hydrothorax, there are a few colorless striæ like those after pouring white syrup into water. A true exudation furnishes a coagulum soluble only in an excess of acetic acid.

The course of cardiacs with pleurisy is modified by the disease but not by heart-tonics. These, if administered incautiously, may induce complete heart failure through mechanical interference. The prognosis is not good, but may be bettered by very active treatment, removing the effusion as fast as it recollects and sustaining the failing heart.

IMPORTANT ILLINOIS LEGISLATION

Among the innumerable foolish and poorly digested bills introduced in our state legislatures, there are always a few that deserve the special approval and support of the medical profession. Such a one has recently been introduced in the Illinois legislature, the object of which is to prohibit "advertising to cure sexual diseases." This bill provides that—

> Whoever shall advertise in any newspaper, publication, magazine, periodical, pamphlet or by circular or form-letter, or cause to be distributed any advertisement in any form whatsoever to restore manly vigor, treat or cure lost manhood, stricture, varicocele, hydrocele, diseases of the genitourinary organs or any venereal disease, or to cure cancer or tuberculosis, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding one hundred dollars or by imprisonment not less than one month nor more than six months or both.

This bill also makes the editor or publisher of the newspaper or other periodical publishing such objectionable advertisements subject to fine and imprisonment. It is a good bill and should receive the united support of all the clean elements of the profession. Quacks naturally will oppose it.

Other bills less worthy of consideration are House Bills 229 and 299. These two bills create boards of examiners for the Osteopaths and Optometrists, respectively. The first bill is peculiar, in that it prohibits all, except those licensed by the board provided for in the bill, from practicing osteopathy. Under its provision, the regular physician would be debarred from using the socalled osteopathic manipulations! These two bills should be killed.

We have already called attention to the dangers in House Bill 210 (Senate Bill 241 is identical with it). This bill has one of those objectionable antinarcotic clauses intended to put the dispensing physician out of business. It should be amended prior to passage. This is a very important measure, and demands your attention.

Another measure affecting the profession is the Canaday Bill (Senate Bill 437), which provides "that any duly licensed physician and surgeon may dispense drugs and fill medical prescriptions in the same manner as registered pharmacists, if there shall be no pharmacy or dispensary, drugstore or apothecary shop within a radius or distance of eight miles from the place where such physician resides or necessarily prescribes for a patient." This is a little peculiar. It may be intended to permit a doctor to operate a drugstore "on the side," or it may be intended to prohibit him from dispensing medicines when nearer to a drugstore than eight miles. At any rate, the phraseology is a little obscure.

Yet another rather peculiar bill is one prohibiting physicians from doing surgical work unless they have a special surgeon's license. Whether or not this is the "first fruit" of the proposed "American College of Surgeons"—which is to have its headquarters in Chicago—we do not know. At all events, a law that would prohibit any *physician* from doing necessary surgical work, even if he did not pretend to the skill necessary to remove appendices, gallstones, and uteri, can hardly be expected to make a hit with doctors—who already are being hedged about by regulations of every kind, all of them having but one thing in common—to make the practice of medicine less desirable and less remunerative. The Chicago Medical Society has protested against its passage, and so should every other live society in the state.

Country doctors, particularly, should be alive to their own interests. These men lack "spokesmen"; they are not able to command "influence"—hence they may be made the prey to those interested in class legislation. Doctor, cultivate the acquaintance of your senators and members in the assembly.

Leading Articles

How Do Purgatives Act?

A Study of Drug Action

By GEORGE E. PETTEY, M. D., Memphis, Tennessee

EDITORIAL NOTE.—This valuable drug study is a portion of a chapter in a book which Dr. Pettey has in preparation. It will be found filled with matter with which you should be familiar.

IN the opinion of the author, nothing connected with the practice of medicine is of such importance as is a thorough knowledge of the action of purgatives, a complete understanding of the physiologic laws upon which their action depends; neither is there a subject that is not more generally not understood.

The difficulty seems to arise from the fact that our medical teachers and writers take it for granted that everybody knows how to give a purgative; all the old women know this, and, so, certainly anyone presuming to take up the study of medicine should know that much to begin with. Therefore, the subject is not as thoroughly taught as its importance deserves.

In the author's opinion, there are but few men in the medical profession who understand the action of purgatives sufficiently to enable them to write for a purgative compound that will effectively and proportionately stimulate all the functions concerned in the evacuation of the bowel; and there are fewer, still, who habitually write their prescriptions so as to conform to that standard.

Purgatives occupy such an important place in the treatment of disease and have been and are so extensively used that it would seem that the principles upon which their action depends would long since have become a matter of common knowledge; but experience has convinced the author that such is not the case. In the healing art, so much depends upon the practical application of these principles that every physician should aspire to a complete mastery of them which will enable him to postulate upon them the physiologic effect of his drugs and thereby be saved from dependence upon the half-knowledge of empiricism.

The Nerve-Centers Govern Action

It should be remembered that the key to the secretory and motor activity of the intestinal canal, and of the glands emptying their products into it, are the nerve-centers. Success in any effort to secure evacuation of the intestinal contents depend upon the degree of success we have in arousing these centers to functional activity. Our success in that effort depends not only upon the condition of these centers, but upon the manner in which we attempt to approach them.

It appears that many of the agents causing disease in the human system exert a peculiarly sedative influence upon the nerve-centers presiding over the motor activity of the intestinal canal. As a consequence, deficient peristalsis, manifesting itself in deficient alvine dejections, is an early symptom of almost all diseases.

This may or may not be accompanied by deficient secretion; but, no matter how abundant secretion may be, if the motor centers are so blunted as to have their activity suspended and to be insensible to impressions conveyed to them, the intestinal tube becomes an inactive, motionless mass that effectively imprisons its contents.

In the treatment of disease, if we undertake to restore motor and secretory activity to the intestinal tube, we have four classes of agents that we may employ, or four modes of procedure at our command. By means of two of these, we can stimulate the nerve-centers directly; by the other two, indirectly.

Direct stimulation of the cerebrospinal centers, if sufficient, arouses all the cells in such centers to activity. As a result of this activity, secretory and motor impulses are generated and transmitted to all the structures deriving their nerve supply from such centers.

On the other hand, indirect, or reflex, stimulation of such centers, unless very extensive, arouses to activity only a part of the cells composing these centers. The motor, or secretory, response to such stimulation is local, and not general. In order that this statement may be more clearly understood, the author will advance this proposition:

The Law Governing Reflex Motor Impulses

The same law governs the generation and transmission of reflex motor impulses that govern the circulation of the blood. "Where there is an irritation, the blood will flow." Corresponding exactly to this, when the terminal filaments of the sensory nerves distributed to any particular structure are irritated, that impression is transmitted to the centers. In response to this, motor impulses are generated and transmitted to the structure from which such sensory impression came; but to no other structure.

The action is essentially local. In other words, "the effect of a given sensory stimulus is manifested only upon a limited and practically constant number of motor nerves." *If the sensory impression is made upon the nerves of a limited area, the motor impulse generated in response thereto will be reflected to a correspondingly limited area.*

Much attention has been given to agents which stimulate secretion, and the individual peculiarities of these agents have been carefully studied; however, little attention seems to have been given to the means of exciting the other function concerned in intestinal activity.

It is well known that deficient peristalsis retards bowel movements, and that, if peristalsis is entirely suspended, no movements occur, still, little practical use is being made of that knowledge.

Too Little Attention Is Paid to the Intestinal Motor Function

Our entire therapeutic endeavor seems to be directed to the *stimulation of the secretory function*, while little, if any, attention is given to the *other essential function*, the motor activity of the intestinal tube.

The almost universal rule is to administer secretory stimulants (chemical irritants), and to trust to them or maybe to some vaguely defined or altogether unknown agency to arouse the activity of the other essential function.

It is true that remedies which excite intestinal secretion do also stimulate motor activity of the intestinal tube; but the manner in which they do this is so inefficient and corresponds so poorly to the time at which such function should be active that it seems quite unreasonable to depend upon such an agency for the production of so important a factor.

The four modes by which the secretory and motor activities of the intestinal canal of the glands emptying their products into it may be artificially induced are: chemical stimulation, mechanical stimulation, electrical stimulation, and physiological stimulation.

Chemical Stimulation

Chemical stimulation is the method almost universally employed, therefore we shall first consider the action of this class of agents, and the difficulties encountered in their employment; also the objections which exist *to their being depended upon* to stimulate the motor function of the bowel.

Let us see with what difficulty these agents accomplish this dual result. Take, for example, the cholagog cathartics. These cause a free flow of the biliary secretion. This secretion is poured into the duodenum, and there it comes in contact with those terminal filaments of the nerves distributed to the intestinal mucosa to which it is a chemical irritant; but it can stimulate these nerves only as it is brought in contact with them.

When motor activity of the tube is suspended, many difficulties lie in the way of its being distributed throughout the length of the tube. Instead of the small intestine being a straight patulous tube through which its contents can readily pass, it lies in numerous convolutions, and at many points a short bent in the tube completely closes its lumen.

If peristalsis is suspended, the downward passage of the intestinal contents is effectively blocked, thus confining any quantity of hepatic secretion which may have been induced by the action of a cholagog to the duodenum and such segments of the jejunum as it may have been able to reach.

If this secretion is abundant, the obstruction to its downward passage causes overdistention of that part of the tube which it first reaches and in which it is confined. All the sensitive nerves supplying this part send

up repeated sensory impressions, and the reflex response to these at times amount to spasmodic contractions.

These violent muscular contractions mechanically irritate the sensory nerves passing through or terminating in their fibers. This mechanical stimulation augments the already powerful chemical stimulation existing in the part. These, acting together, cause violent contractions of the tube, which force the contents both upward and downward.

If the segment thus irritated be near the stomach, bile and other intestinal contents are forced up into that viscus. If lower down, these contractions straighten the bend in the tube immediately below this segment, thus allowing the contents to pass downward to another segment of the tube.

It is here again arrested and held until the irritation caused by its presence reflexly stimulates this segment of the tube to such degree of motor activity as to straighten the bend at its distal end and thus permit the further downward passage of the intestinal contents.

This phenomenon is repeated, segment by segment, until the chemically irritating intestinal contents have gradually but with difficulty worked their way through the entire length of the tube, and then, but not until then, does evacuation of intestinal contents begin.

It is evident, *since local irritation begets only local motor activity*, that, in order to arouse peristalsis extending throughout the entire length of the tube, the chemical irritant upon which we are depending to stimulate such function *must be distributed throughout the entire length of the tube.* When the motor centers are profoundly lethargic, resulting in entire suspension of peristalsis, *this process is a physical impossibility* except by the tedious and difficult process just described.

Mechanical Stimulation

Massage of the bowels is another indirect means of stimulating the motor activity of the intestinal tube; but, since in practicing massage the hands of the operator are free to move at will, a large portion of the surface of the tube may be stimulated simultaneously, thus sending sensory impressions from almost the entire length of the tube. These impressions are responded to by motor impulses transmitted to a correspondingly extensive area of surface.

While this is a reflex phenomenon, these responses are transmitted in such numbers and to such an extent of surface that they throw the entire tube into a fair degree of motor activity resembling to a considerable extent peristaltic waves generated by the centers when acting normally.

In describing reflexes, the older physiologists had in mind only reflex movements; but at the present time physiologists are agreed that the reflex act affects not alone the muscles, voluntary, involuntary, and cardiac, but also the glands. We have, therefore, to deal with the reflex secretion as well as with reflex motion.

It should be borne in mind that by massage of an organ supplied with secretory nerves the impressions made on their efferent branches are converted into secretory impulses, and that these are transmitted to the organ from which the irritation came, along with such motor impulses as may be excited by the massage.

Secretion and motion thus excited is distributed throughout the entire length of the intestinal canal, no part of the tube being overstimulated, while other parts remain unreached.

Massage, either by the hand of a masseur or by an electric vibrator, is a therapeutic measure which can hardly be overestimated. It can be used with the most happy results in connection with other measures.

Another form of massage, much less positive but none the less valuable as a health-measure, is deep breathing, forced abdominal respiration. One who would preserve his health and keep himself in the best working-trim will find this an invaluable aid if faithfully practiced.

The best results are obtained by devoting ten to fifteen minutes to the practice of this exercise immediately after retiring at night. It should be carried out as follows:

Lie on the back, with limbs straight, or on one side, with knees drawn up; then by extra effort fill the lungs to their utmost capacity until the abdominal muscles are forcibly distended. Hold this position about ten seconds, then expel the air from the lungs, at the same time *forcibly contracting the abdominal muscles.* Repeat this at each inspiration until ten or fifteen minutes have been devoted to the exercise.

This alternate forcible distention and contraction of the abdominal walls changes the relation of all parts of the intestinal canal to each other, thus distributing and mixing the bowel contents. This mixing of the intestinal contents promotes the normal chemical changes, and these new compounds (nature's stimulant) induce, reflexly, both secre-

tion and movement, and the result is a more complete evacuation of the waste products.

The mental concentration incident to the successful carrying out of this exercise exerts a most favorable influence upon the function we are seeking to promote. Forced abdominal respiration is a voluntary act, and in order to carry it on successfully, the attention must be concentrated upon it to the exclusion of all other things.

Mental states greatly influence vital functions. Anxiety, fear, grief, excessive mental activity impair digestion, secretion, and excretion.

Conversely, concentration of the mental faculties in an effort to promote bowel movement, even for so short a time as fifteen minutes, *involves the cessation of damaging mental states*. The surcease thus afforded, the relaxation and response accompanying it, give a lethargic function a chance to become active.

In many instances, the mental concentration incident to the practice of massage by forced abdominal respiration proves to be hypnotic to such a degree that before the fifteen-minutes' exercise has been completed the subject is asleep, the subconscious mind simply having taken control while the conscious mind was intently concentrated upon the promotion of a vital function. The next morning a more satisfactory bowel movement occurs. Is not such a result worth while?

Electric Stimulation

The motor centers can be stimulated to functional activity by electricity. While this is theoretically true, the author does not believe that electric stimulation can be utilized to much advantage.

(*To Be Continued.*)

General Paresis

Salient Facts Concerning this Form of Insanity

By THOMAS G. ATKINSON, M. D., L. R. C. P. (London), Chicago, Illinois
Associate Professor of Neurology, Chicago College of Medicine and Surgery

EDITORIAL NOTE.—Now that the researches of Noguchi have apparently settled definitely the syphilitic origin of paresis of the insane, a new interest centers in the study of this all-too-common disease. We therefore take particular pleasure in presenting Professor Atkinson's interesting study at this time.

THE relation between paresis and syphilis, which we have long suspected but have not hitherto been able to prove, has been at last definitely and conclusively demonstrated. It is now certain that in etiology and pathology paresis is the cerebral analog of tabes dorsalis, and must be classed among the so-called parasyphilitic diseases. Beyond this, there is really nothing new to add to our prevailing knowledge of the subject.

General paresis begins, as tabes does, very insidiously, with subtle changes in the minute vessels of the pia mater, whence they are communicated to the outer, upper layer of the brain, known as the molecular layer. The actual changes which take place in the brain-tissue are not always of the same nature. Sometimes they consist in the breaking down of the cells into soft hyaline detritus; sometimes in the replacement of the cell-tissue with neuroglia. The latter is by far the most frequent. Whatever the process, however, it is always disseminated over the entire surface of the brain; and this constitutes an important element in its differentiation from other cerebral diseases.

When we remember that the layer of the brain first attacked in this insidious fashion is that in which all the higher, psychic functions are supposed to have their operation, it is not difficult to predicate and interpret the symptoms of this early stage of paresis.

The Symptomatology of Paresis

The first signs of derangement are seen in certain subtle changes in the morale of the patient, who begins to manifest a little blunting of his finer sensibilities, a little looseness in his conversation and conduct. It is easily distinguishable from moral carelessness, although the difference is hard to define. It is not a coarse, deliberate, vulgar offense against proprieties, but a subtle, innocent, unpremeditated departure.

Together with this, the patient, develops a failure of memory, which, again, is quite unlike an ordinary defect of memory in two important particulars: first, it is an utter lapse, not a mere laxity; second, it concerns vital matters, not those relatively unimportant things which anyone is apt to forget. Thus, a patient of mine, as a first indication of incipient paresis, forgot one morning to go to his business—a lapse of memory so vital and extraordinary that I had no hesitation in at once attributing it to some serious brain lesion, probably paresis.

We are told that irritability is one of the early symptoms of paresis. But, if by this is meant an irritable disposition, I am bound to say that my own experience does not support it. Such irritability is an early sign of thrombosis, or of any other condition involving cerebral anemia, which conditions are frequently diagnosed as paresis. My experience, however, is, that the true paretic is, from start to finish, sublimely unconcerned, quite good-humored, and perfectly contented; with one notable exception, which I shall mention later.

However, there is considerable objective irritability. For example, the paretic patient, during the first stages, generally displays great garrulity and precipitate speech, his words tumbling on each other's heels. In like manner, he exhibits great motor restlessness; a constant desire to be walking about. But he tires quickly. He often suffers from insomnia. The pupils usually are immobile. There are fine tremors of the lips. As the pathologic process deepens and involves the polymorphic layer of the brain, the mnesic faculty becomes still more faulty. Speech becomes slurred, dropping out syllables and vowels, and the writing shows corresponding lapses. There is a curious hesitancy and uncertainty in all that the patient says and does.

The degenerative process gradually extends downward into the cortex and attacks the motor cells of the medullary portion. The speech then becomes slow and scanning, with appreciable intervals between words and syllables, representing the effort of the brain to overcome the disability of the motor mechanism of speech. By degrees, however, the patient generally gives up this effort, and ceases to speak at all unless spoken to; and then he is prone to get angry and impatient—not, though, with his questioner, but with himself. Writing at this stage is scrawling and illegible, and gradually this faculty, too, falls into desuetude.

There are now, of course, marked neuronic symptoms, due to involvement of the motor centers of the cortex. The muscles become spastic, the reflexes exaggerated, the gait jerky, motor power weakened, tremors and jactitations occur in all the limbs, and the patient is unable to execute any finely coordinated movements. As the degeneration spreads, all of the symptoms, mental and physical, deepen, until at last the patient sinks into dementia and a state of paralysis. In this last stage he is an absolutely helpless burden upon his attendants, having neither mental capacity nor inhibitory control of any of his functions. Death occurs within a year or two.

Paresis and Thrombosis Differentiated

The chief interest in paresis centers about its differentiation from other conditions which somewhat resemble it.

True paresis is an utterly hopeless disease. Not only is it incurable, but no known treatment will even so much as stay its progress. On the other hand, other conditions that often are confounded with paresis frequently are amenable to treatment. Hence the importance of an accurate diagnosis.

Indeed, in spite of some superficial resemblances between this and certain other diseases, there really should not be any confusion, for paresis has some very definite characteristics, both in pathology and in symptomatology, which single it out in very clean-cut fashion from all other cerebral disorders. General paresis is, for example, the only cerebral disease which attacks simultaneously the entire free surface of the brain. It is also the only disease which begins at the outer layer and progresses downward and inward. And it is, finally, the only disease in which the brain-tissue itself, over its entire area, is replaced with productive tissue.

Perhaps the best way to point the clinical significance of these characteristics is to discuss the differentiation of paresis from one or two conditions with which it is commonly confounded.

Cerebral thrombosis is, perhaps, most likely to suggest a diagnosis of paresis. Here we have but to consider the radical difference in the pathology to grasp at once the equally radical differences in symptomatology. The changes that take place in the brain in thrombosis are the changes due to anemia. A portion of the brain is cut off, with progressive constriction, from its supply of nutrition by reason of the ever lessening

lumen of the artery which feeds it. This artery is practically always a fork of one of the terminal arteries in the inferior posterior part of the brain. The anemic area, therefore, is a circumscribed, unilateral angular portion, whose apex is at the seat of the lesion and the base including a certain area around the Rolandic fissure, which widens as the disease progresses.

Thus, the condition of cerebral thrombosis is a cortical one from the outset, beginning as a monoplegia and gradually involving the motor centers, on the same side, in regular order as they lie along the Rolandic fissure. It rarely involves the truly mental faculties at all; never until in the latter stages. If it be on the left side of the head, it will involve, in its order, the function of speech; but only the motor mechanism, not the mnesic aspect. So, also, with vision; it may diminish visual acuity, by reason of optic atrophy, but will not produce mind blindness. It exhibits, to be sure, all the neuronic and motor symptoms of paresis, but these occur much earlier than in paresis, are usually one-sided, and progress as stated, in the order in which the centers are represented in the Rolandic area.

In short, a cerebral thrombosis presents the picture of a one-sided lesion, involving the brain from the stem outward, and progressing by circumferential spreading, like a wave from a dropping stone; whereas paresis gives the picture of a disseminated lesion, involving the entire surface area of the brain from the outset, attacking the psychic area first, and extending by depth, into the cortex.

So far as the prognosis of general paresis is concerned, of course, a diagnosis of thrombosis or of paresis is not of such great moment. Both are equally hopeless. But in view of the now established relationship subsisting between general paresis and syphilis, it is not desirable to fasten upon a patient, by implication, a syphilitic history, unless one is quite sure of his ground. And, besides, while both diseases are hopeless enough as to cure, yet, paresis is such a terrible siege of trying, and even disgusting, helplessness that a diagnosis of this disease is sufficient to warrant an immediate commitment to an asylum; while, on the other hand, thrombosis is a mild and harmless condition which it is usually preferable to handle at home.

Syphilitic Gumma or Paresis

Clinically, no doubt, paresis is much more often confounded with cerebral gumma, because both these conditions are sequels to syphilis, and are therefore, equally to be postulated upon a syphilitic history. I suspect that most of the cases of "paresis" which we hear of as being "cured" by antisyphilitic treatment were in reality cases of cerebral gumma wrongly diagnosed as general paresis. Still, there really should be less confusion between these two than between paresis and thrombosis, for they are even less like each other in essential characteristics.

Gumma is almost always focal, and gives rise to focal groups of symptoms. And even when the gumma is disseminated, as not infrequently happens, it does not involve the entire brain area uniformly, as paresis does, but occurs in patches, irregularly and asymmetrically distributed; hence, the neuronic symptoms to which it gives rise (paralysis, reflexes, spasticity, etc.) are correspondingly irregular and assymmetrical. (This is characteristic of nervous syphilis of all kinds.) What is still more important, gumma almost never invades the outer psychic layers of the brain, so that its manifestations are practically never psychic, as those of paresis are, but purely cortical and stem symptoms, including, as a rule, third- or fourth-nerve paralyses, ocular paralyses, and others.

Furthermore, gummata are in the nature of foreign bodies in the brain-substance, and, so, always give us the symptoms of intracranial tension (slow pulse, fever, choked disc, unequal pupils, etc.), and are invariably attended by some degree of meningitis, with its characteristic manifestations (intense headache, strabismus, etc.).

Finally, the therapeutic test will quickly settle the diagnosis. There is no condition known to neurology that responds so promptly and satisfactorily to treatment as does cerebral gumma to vigorous antisyphilitic therapy; while such measures make no impression whatever upon true paresis.

From acute mania, the differentiation sometimes is exceedingly difficult in the earlier stages, for acute mania can, and often does, exhibit a symptom-complex almost precisely the same as that of paresis. The motor restlessness, the precipitate speech, the subtle character changes, the insomnia, the absence of cortical symptoms, all conspire to make the two conditions very much alike. Nevertheless, there are two symptoms, which, if they be present, serve to distinguish mania. One is the fever, which is usually quite high in acute mania, but never is present in paresis (if anything, the temperature is subnormal); the other is the paradoxical reflex of the pupil which occurs in mania; namely, when

light is thrown into the eye the pupil expands instead of contracting. This latter symptom is pathognomonic of insane states.

Differential Diagnosis From Neurasthenia

Finally, and perhaps most seriously of all, general paresis must be distinguished from neurasthenia. This of course, applies only to the early stages of the former—but that is just when diagnosis is of most importance.

Superficially the symptoms of neurasthenia may be said to resemble those of incipient paresis; but the resemblance is but skin-deep and ought not to deceive the physician. There are, for instance, socalled character changes; but the changes in the neurasthenic are not genuine qualitative changes of character; they are merely accentuations of certain elements in his character, usually of the unpleasant, selfish elements. So, also, there are marked defects of memory; but in the neurasthenic these are mere abstractions of attention, not actual lapses, and they concern incidental, not vital matters.

In short, both the character peculiarities and the forgetfulness of the neurasthenic are due merely to his morbid concentration of attention upon himself and his woes, beside which everything else sinks into comparative unimportance for him. He is everlastingly concerned about himself and his condition. He likes to talk about them, especially to a physician, therein differing markedly from the paretic, who is with difficulty persuaded that there is any reason for consulting a doctor.

Furthermore, the victim of neurasthenia is troubled with insomnia; but his insomnia occurs during the first part of the night, and when once he gets to sleep he sleeps well. The paretic's insomnia (and that of all organic brain diseases) is during the last part of the night; he wakes up in the early hours and cannot sleep again. All the subjective and neurotic symptoms of the neurasthenic improve, almost to the vanishing point, under excitement, especially pleasurable excitement; those of the paretic become worse.

But the final test as between paresis and neurasthenia, of course, rests upon the complete absence of all objective neuronic symptoms in the neurasthenic. He has no immobility of the pupils, no disturbed reflexes or muscles, beyond a slight increase in the knee-jerk which disappears during sleep or distraction, no optic atrophy or neuritis, in fact no objective signs of any kind.

The treatment of paresis, as already stated, is utterly unavailing so far as the disease itself is concerned. All that can be done is to control the cerebral excitation and to maintain as far as possible the activity and cleanliness of all the emunctory channels. For these purposes it is essential that the patient be placed in an institution where such cases are efficiently handled. Cannabin is *par excellence* the drug for the paretic, and should be given as a routine measure from the start. When there are furious paroxysms, such as frequently occur, the drug may be temporarily replaced by hyoscyamine, or the hyoscine-morphine-cactoid compound in full doses.

To maintain elimination, nothing will surpass a combination of boldine and juglandin, given as may seem necessary, to promote the output of urea; and a combination of phenolphthalein and the sulphocarbolates, to keep the bowels clean and aseptic as well as to prevent an accumulation of indican and other autoinfectious substances.

All of these drug-measures are, of course, to be reinforced by properly applied hydrotherapy and psychotherapy. These patients should receive frequent warm baths, rubdowns, and spongings. It should also be remembered that their heart action is not by any means of the strongest; and this is to be supported, when necessary, not by strychnine, but by cactoid or sparteine.

Acute Anterior Poliomyelitis

The Record of One Epidemic of the Disease

By A. H. SOUTHWICK, M. D., Limestone, New York

EDITORIAL NOTE.—Two important discoveries have recently been announced regarding acute anterior poliomyelitis: Last fall Rosenau, of Harvard, stated that he had been able to demonstrate that the disease was transmitted by the bite of the stable-fly, stomoxys calcitrans; in March, of this year, Flexner described the specific microorganism, which he has succeeded in isolating. These two discoveries intensify interest in Dr. Southwick's record of personal experience, which is as helpful and practical as it is interesting.

DURING the summer of 1912, there occurred in my practice ten cases of acute anterior poliomyelitis, and a brief history, together with a statement of the treatment instituted and some deductions drawn from the experience, possibly may prove of interest to some readers of these pages.

Eight of the cases were in this village, the other two in an isolated farming district five miles from here. The oldest patient was ten years of age, the next younger was four, and the others were between one and two years. Seven had paralysis of the extensors of the right leg (foot); one, paralysis of the right arm and shoulder. In one the paralysis affected the muscles of the chest, diaphragm and neck, and in one the right side of the face and neck was affected.

All those suffering lived widely apart and did not by any possibility come in contact with each other, except the two out in the country. The latter had been in this village the week previous to their illness, but not to any house in which the disease afterward developed. Their homes in the country were a few rods apart and communication between the families was frequent. There was a case in each house, but both victims were taken ill about the same time.

All the attacks developed during the week beginning July 24, and none occurred after this week. In five instances the patient was the only child, and in the other five there were from two to six children in the family. No two cases occurred in any one family. Quarantine was established in every instance, although no one would go near a house in which the disease was known to be. An attempt was made to isolate patients as much as possible from their brothers and sisters, but with only very slight success.

The Symptomatology of These Cases

The attacks uniformly began with vomiting and fever, great muscular pains, and a feeling and appearance of illness disproportionate to the symptoms. The temperature was around 102° to 103° F., and so continued for about a week. In three or four days (sometimes earlier) the paralysis developed. The children cried out with pain when lifted. There was tenderness along the spine and the head was retracted. The knee-jerk could not be elicited in the affected leg, but sensation did not seem to be disturbed. Quite severe cerebral symptoms occurred in one patient, together with strabismus and stupor. Children beginning to creep or walk could, of course, no longer do so, but dragged the limb after them.

All the patients have slowly improved, with the exception of one (a tuberculous child); four have recovered completely. The oldest patient, a girl of ten, first walked with the aid of crutches, next with only a cane, and now she walks quite well without any support, although the paralysis still is quite evident. Nothing like contractures were observed in any of the patients. There is no reason, when a muscle or a system of muscles is paralyzed, why the opposing muscles should be thrown into a state of tonic contraction, and nothing of the kind has resulted in my patients, at least.

The Method of Treatment

The treatment was practically the same for all. First of all, thorough elimination was inaugurated by means of calomel and podophyllin; then followed saturation with calcium sulphide. After the acute symptoms had subsided, small doses of strychnine arsenate were persistently given, besides such other medicines as seemed indicated for special reasons. Pillows were placed so as to support the affected foot and leg in the most comfortable position. Once a day the child was sponged with a creolinated epsom-salt solution. Three times a day the nose and throat were sprayed with a 50-percent

solution of hydrogen peroxide. Seeing no particular indication for urotropin, and never having heard of its use doing good, I did not give it. Morning and night the back and leg were rubbed with warm coconut or olive oil, the paralyzed leg being gently massaged and subjected to passive movements. (This, after all fever had left.)

After the morning bath and massage, the children were placed upon a blanket on the floor, given pillows and their playthings, and were left to their own devices. Without an exception, the gentle rubbing of the back with oil and the massage of the limb gave comfort, although at first they dreaded it. During the previous winter and spring all these children had had measles or whooping-cough, some having had both; none had fully recovered longer than two months before the disease was contracted.

Is Dust an Etiologic Factor

For four weeks prior to July 24, there had been no rain in this immediate vicinity; consequently there was a vast amount of dust, and this was constantly stirred up by innumerable passing automobiles. In a neighboring city of about 18,000 inhabitants, seven miles distant, no poliomyelitis, to my knowledge, occurred. However, a young lad from that city, who spent his vacation here at the period in question, was taken ill and upon returning home developed the disease, with paralysis of the legs. He has now nearly recovered, I am informed.

Acute Poliomyelitis in an Adult

During the week mentioned, I was called to see a strong, healthy man of about forty. He had vomiting, muscular pains and fever. I made a tentative diagnosis of poliomyelitis, but with which he disagreed, thinking his effection rheumatism. He passed from my care and entered a hospital, where paralysis of both legs set in. He remained in the hospital six months, and, although now home, has made very slight, if any, improvement. At the hospital his trouble was diagnosed as multiple neuritis, and the symmetrical paralysis would rather incline one to this diagnosis. However, the lack of sphincter involvement, the sudden onset of the attack, and the slight improvement after so many months, in connection with the similarity of symptoms, lead me still to believe this also to have been poliomyelitis.

I should have stated that in two separate summers, about four years ago, I attended two other victims of infantile paralysis in this village. One recovered completely in about three, the other in about six weeks.

In recalling the history of these ten or twelve cases, I am led to certain conclusions:

Conclusions

Anterior poliomyelitis must be very slightly infectious, exceedingly so, as witness the occurrence of the single occurrences in large families.

If the *materies morbi* is carried by stable-flies, it is strange the disease did not develop in the nearby city, where there are, presumably, more breeding-places for the insect.

In the city referred to, there were frequent rains, but, as stated before, none here, and as a result vast clouds of dust were constantly drifting into the houses. It seems likely, therefore, that the disease-germs entered with the dust.

It occurs to me that, having but recently recovered from measles or whooping-cough, the mucous membrane of the air-passages of these children was peculiarly susceptible to infection; besides their being below par and thus not offering normal resistance to the invasion of new germs.

I have read of placing the affected limb in plaster-paris. By doing so, the child is effectually prevented from maintaining what little muscular power remains, and the development of more strength through use is thereby precluded.

Tenotomy in any of these instances would be simple mutilation. The children are badly enough crippled as it is, and contractures have not developed in my charges.

Should I have to attend poliomyelitis patients in the future, my treatment will be as follows: In addition to everything used as above stated, the doses of calcium sulphide will be very largely increased; in addition, in the early stages, ergotin to the limit will be given. Also a blister six or eight inches long and one inch broad on adhesive plaster will be applied to the dorsolumbar spine; care being taken not to injure the true skin. Blisters are supposed not to heal well in paralytics; it all depends, however, where you place the blister with reference to the paralysis. I shall try them, at least.

This is simply the narrative of a personal experience. I do not know that my treatment did any good whatever, but at least none of the patients died—for which I am very thankful—and until someone has something more effective to offer, my treatment in the future will be as indicated.

Caution: Do not give calcium sulphide and calomel very close together; they are incompatible.

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[Since Dr. Southwick's paper was written, Flexner, of the Rockefeller Institute, has announced the discovery of the specific organism of acute anterior poliomyelitis. Whether or not the isolation of this bacterium will contribute to the cure or prevention of the disease of course we cannot say. Presumably any thing which throws new light upon any problem will eventually aid in its solution.

Flexner does not seem to be convinced of the essential etiologic relationship between the stomoxys calcitrans and infantile paralysis; neither were the Swedish delegates to the Congress on Hygiene and Demography held in Washington last fall. Probably the biting stable-fly supplies one means of transmission, but there may be and probably are other sources of infection. The fly theory does not seem to cover every case, as Dr. Southwick's own experience shows.

The method of treatment advocated by the Doctor is certainly logical. Another remedy which has been frequently suggested, and which seems to give good results, is gelsemium, or its alkaloid, gelseminine. There is nothing "specific" about this, of course, but that it is valuable (of course in association with other indicated remedies) when given "to effect" there is ample evidence as any one may clinically verify.—ED.]

The Doctor in Cuba

By HENRY BRONSON HOLLEN, Ph. G., M. D., Miami, Florida

EDITORIAL NOTE.—Here is an interesting account of things medical as they a and are being done in that foreign field. Dr. Hollen tells us much that is of interest.

TAKE him as he comes, the doctor of this part of the world fares somewhat better than the average member of our profession in our own country. But quite undeservedly, for the everyday Cuban practitioner is inferior on almost every count. In the first place, he is not so resourceful nor so intelligent in his treatment of the sick as is his American confrère, and, consequently, is not as successful from the standpoint of results. Neither is he equally skilful as an operator. He starts in with a flourish and proceeds without hesitancy, which impresses the casual observer with the idea that he is all that could be desired; but the details he is inclined to disregard. Furthermore, he fails to show that gentle concern and touch which endears our own doctor to his families.

In certain directions the Cuban doctor is schooled with thoroughness, and shows it. In diagnosis he is most proficient. He takes considerable pains to arrive at a correct conclusion—it is not his nature to hurry—and, as a result, he avoids the mistakes the American practitioner frequently makes by going too fast. On the whole, however, as stated at the outset, he falls short.

Yet, in a way he fares well—his income is larger in comparison, and he occupies a more elevated place in his community; socially he stands high, and by his patients he is held in the profoundest respect. The prosperity he enjoys is traceable to the fact that there are relatively fewer of him; the medical field here is not so crowded, he finds plenty to do, and what he does he is well paid for.

The main reason why the doctor here is so highly respected and generally kowtowed to is that learning among the Cubans (as in all the Spanish-American countries) is not so broadly diffused as it is with us. The illiteracy that here prevails is plainly indicated by the way the street-cars in the city of Havana are marked or identified. So many of the people are unable to read that it is necessary to designate the route and destination of the different cars by means of contrasting color-schemes.

Write Prescriptions, and Often for Quack Nostrums

One fact standing out is, that physicians hardly do any dispensing here; writing prescriptions is the rule throughout the entire island; furthermore, the prescriptions written, in seven cases out of ten, are for ready-made or proprietary medicines. This, in itself, is not so very surprising; but, when we come to seek deeper into conditions, we find that the *medico*—as they say here—does not limit himself to the ethical preparations, remedies meant to be for doctors' use only, but will not hesitate to prescribe common secret nostrums such as are being blatant-

ly advertised to the laity in the daily newspapers.

It may be that he is unsophisticated, or he may look upon the matter from an angle peculiarly his own and a viewpoint we are unable to appreciate; at any rate, the doctor here—whatever the reason—exhibits no hesitancy in prescribing for his patients such preparations as Ayer's sarsaparilla, Scott's emulsion or Barnet's wine of pepsin. As regards the formula, he may have only the vaguest notion; but, apparently, that makes little difference to him. It does not seem to occur to him that, in prescribing nostrums of secret formula and questionable value, he is promoting self-drugging by the laity and thus hurting his own interests—not for one moment. To me, this is an inconsistency to ponder over. Still, we must not forget that some of our own practitioners are guilty in the same way, although perhaps in a less degree.

While applauding the Cuban doctor's accuracy of diagnosis, we are almost startled by his inaptitude in the employment of remedies. When he writes a prescription that is really worthy of the name, it often is antiquated in character or is of the polypharmic order. It may be commendable to stick to certain old, time-tried drugs; but, on the other hand, it is a mistake to disregard the new when that is decidedly an improvement upon the old. To illustrate: In the treatment of syphilis, the Cuban medic of the period still is likely to write prescriptions for mercuric chloride and potassium iodide in aqueous solution; and I saw such a one a few days ago in the hands of a patient who had just come from his doctor. And I am told this mixture is a "repeater" at the drugstores of the island.

An example or two may serve to indicate prevalent inefficiency in the way of rational therapy. An American girl, employed as a stenographer here, showed me a prescription given to her for a headache. It called for heroic doses of potassium bromide, acetanilid, and phenacetin. Think of it! It looked formidable even to this girl and she concluded not to get it filled, but, instead, went to the druggist and got 20-cents' worth of aspirin in capsules. Of the two, if we were to judge by this one instance, the girl demonstrated herself to be the better doctor.

Another American, a gentleman whom I met last week in the Parque Centrale, said he found himself, a short time before, in a nervous, debilitated condition and, concluding that he needed tonic treatment, he went to a native physician. The tonic prescribed for him was "wine of kola and caffeine"—only that. The *medico* had been recommended to him in glowing terms, and, of course, he gave the remedy what he considered a fair trial; that is, he took this tonic for a whole month. But he failed to improve. A little later he happened upon an advertisement of a proprietary preparation, popular in the States, and he claimed now to be "on the mend."

A New Therapy Needed

The doctor here needs a newer and a more scientific system of therapeutics—he finds himself today in the same unsatisfactory footing as did the American profession a dozen or so years ago. The gospel of the active principles would be welcome; the time is ripe for its acceptance. A great service would be rendered here by setting educational forces to work. In the end, and that not afar off, the reward would surely come.

To be fair in our appraisal of the Cuban doctor, it must be admitted that he has lacked advantages; his schooling has been along the regular line, strictly, and he travels in the groove in which he was set agoing. The influences that make for progress have not reached him either as a student or, later in life, as a practitioner.

The Ins and Outs of the Cuban Medico

By his own people the home-article is believed to be superior to the doctor of any other nationality; they have the greatest confidence in his ability. This is in his favor: not so, however, the other fact, that in the conduct of a case he is always subject to abrupt discharge for no apparent cause. Consultation, as we know it in the States, is nonexistent here. One resident northern doctor cited to me a personal experience, and it is typical:

The doctor was called to treat a person sick with typhoid fever. After three days the relator was dismissed and the family called in another physician. At this the one first in the case demurred, it being decidedly unlike his experience in the States, but to no avail. The second doctor staid on the job just for four days, when he in turn was invited to make way for a successor. Altogether, a dozen physicians were called in on this case by the family before the stage of convalescence was reached. Strangely enough, the patient survived.

This abnormal practice may account for the absence of that friendly and sympathetic relation that in our own country exists be-

tween a family and the chosen family doctor. In truth, there is no "family doctor" here—the doctor comes, when called, forearmed with the knowledge that he is subject all the time to the caprices of the patient or, especially, his relatives.

On the other hand, the doctor is well paid, which may help to console him. For an office consultation he never takes less than two dollars—often three. For an outside call his fee ranges from three dollars to five, not infrequently five within the city limits. He exacts good fees for operative work, fixing these according to the putative bulge of his patient's pocketbook. The rich man is levied upon heavily; and he pays uncomplainingly, because he expects it; and were he tendered a small bill, he would feel slighted, as though classified with his poorer neighbors.

Very independent is the *medico*—very. He seldom hurries—he eats regularly—gets his sleep—and when tired just sits down and rests. The spirit of *"hasta manana"* (mahnyana) is in him as in everyone else of this tropical clime. His telephone-bell may ring, his office may fill up to capacity—it matters not. If in the mood, he will work; if not, he will smoke or linger complacently over his *cafe con leche* at the corner restaurant.

His lot might be most enviable, indeed, were there no depleting factors. But, as it is, he is saved from too much prosperity by the many societies, of the fraternal order, which provide medical care and dental care, and even medicines to members for a small monthly fee, usually one dollar. The "Associacion Cubana de Beneficiencia" is of this order. It maintains a large hospital on the outskirts of the city.

The Cuban Hospital

Hospitals there are aplenty, and some are fairly good. They are commodious, and usually seem impressive to the visitor who sees things only superficially. But they are not up on nursing here, and the little attentions we are accustomed to will be missed. In the hospital mentioned in the preceding paragraph, all the nurses are males; in other hospitals, male nurses are assigned to male patients and female nurses to female patients.

Self-drugging is exceedingly common here. The papers are full of nostrum advertisements. On every side we come across old acquaintances presented in Spanish garb. There is the "emulsion de Scotti," for example; this fattener looms up everywhere. Also we see the familiar face of "Lydia Pinkham" and the heavenward-pointed finger of "Dr. Munyon." Castoria is here, and danderine, and a score of others, not omitting Dr. Williams' pink pills for pale people. Oh, yes, peruna and cascarets are on hand, too!

The "quack" is also in evidence: the man who cures all chronic diseases *muy rapidamente;* that other *medico,* who cures diseases, without any medicines, by the *fisioterapico* method; and the advertising oculist who takes hold of every provocation to sell a pair of glasses. Even a certain notorious Chicago concern has thrust its grasping fingers down here, appealing to the male population.

Some Interesting Observations

The relations subsisting between doctors and druggists are perfectly friendly. The former is not permitted, under the very strict law, to dispense—and seldom, if ever, does.

Doctors do the embalming here, and they fix the charges to suit themselves.

Looking into a drugstore, or *botica,* as it is called, we find, as part of the stock, large quantities of proprietaries—mostly American and French. The other feature to attract our attention are the decorated porcelain jars, greatly in evidence upon the shelves, these serving as receptacles for wellnigh everything on hand, from ointments to salts. Indeed, this apothecarial outfit vividly calls to mind some of the pictorial representations in Peter's "Ancient Pharmacy."

Prescriptions are written, almost exclusively, according to the metric system, as hardly need be stated. The customer is considered, always, to be the owner of his prescription, which is returned to him after being copied in the record-book.

The ethical physician may not advertise, except to the extent of passing out his business card. But this card often goes into details that positively would be ruled out in the States, besides containing much that is self-commendatory.

It takes five years to complete a medical course, two of which are preliminary, or rather preparatory, corresponding to as many years in one of our universities.

The one, and only, medical school in Cuba is a department of the University of Havana, a very old institution, being the first, with Lima (Peru) and Mexico City, to teach the sciences in the new world. In this school of medicine, as also in that of pharmacy, various of our own textbooks are now in use, notably a translation of our Pharmacopeia.

Though nature is kind in this land, the days always warm and sunny, and an out-

door life permissible all the year round, yet we find much sickness. There is no bronchitis or pneumonia here, but fully as much tuberculosis as up north. Neither is rheumatism prevalent. Of venereal cases, though, there are galore.

Strange to say, the people (the masses) live in dark, dingy quarters, which are crowded to full capacity and closed up at night—the folk down here all are mortally afraid of the "night air." Also, the clerks sleep in the stores and offices where they work, sometimes forty or fifty in one place. Many die from disease of the heart, and liver, and kidneys. The sanitary conditions are still bad. To a visitor, afoot on the side streets, especially for the first time, the remoter parts of Havana City are distinctly "smelly."

The people, as in all Spanish countries, are given to smoking cigarettes. Innumerable times in the course of the day, during business hours as well as in the lapses, the Cuban turns into a *fonda* for his coffee and a good smoke, and ordinarily he burns up from sixteen to as many as fifty cigarettes in a day. He smokes early and smokes late; he smokes from his early boyhood days to the end of life—and some seem to grow pretty old, too.

From sugar-cane is made a rum, which is drank everywhere. It is a cheap drink—strongly alcoholic—and must certainly ruin many good livers and kidneys. Many of the population also are given to the insidious absinthe, although good bottled beer is consumed to a large extent.

The Cuban is given to sex excesses. Masturbation is very commonly practiced, as are also other perversions. Syphilis is visible on every hand, although many of the cases seem to run a very mild course.

All contagious diseases are quarantined—flags in the doorway being used to warn the public. A yellow flag, for example, signifies that there is scarlet-fever in the house. Intestinal diseases prevail here, as might be expected, particularly in the country districts. But yellow-fever, which once depopulated the island, has practically been wiped out. No cases have been reported in ten years.

The Chances in Cuba for Outsiders

It is noticeable that the doctors who have had a year or more of schooling abroad (in the States or in Europe) are doing the best work; and the proportion of these is increasing rapidly. A great many, perhaps twenty-five percent, speak English.

It surprised me to find that only three American doctors are in the field. There is room for more—those who are here are doing well despite the proverbial preference of the Cuban for his own. However, the present law governing medical practice is a discouraging barrier. An outsider must turn in to the faculty of the University of Havana his diploma for approval. Then he must stand examination, on all branches of medicine, *in the Spanish language!* As a matter of fact, it is possible to "beg off" on the last, and it is likely that true reciprocity will be provided by the new administration. At any rate, a graduate of a good school or a doctor licensed to practice in the States need have no fears—he probably will not be troubled.

One Osteopath is practicing in Havana. He told me that he simply "came down and started in." So far nobody has molested him, although he advertises to treat "all diseases common to men and women." From what I can learn, he is kept pretty busy.

A certain member of the legation recently asked me to send to the island a good eye-and ear-man; such a practitioner, he assured me, could have all he was able to do from the first month. Also there is a field here for a doctor who is in position to open a small hospital for the benefit of the rapidly growing American colony, and for others in the city who may care to come in.

Why I Prefer the Active Principles

By GEORGE L. SERVOSS, M. D., Gardnerville, Nevada

THERE are several reasons why I prefer the active principles. Primarily, I have found them to be pure and invariably active, lot for lot. They have obtained for me the anticipated results in case after case, and when administered according to indications so far have never failed me.

My experience with the active principles reaches over a period of seven years. Prior to that time I thought—as do many today—that this form of remedial agents derived from the vegetable kingdom was too potent to be employed with safety in practice. I was fearful of the results that might follow their administration. And this despite the fact that, like every other doctor, I had been employing the more commonly known alkaloids, notably morphine, codeine, strychnine, atropine, besides a few others. During my days in the medical schools the teachers advised us that the active principles, the alkaloids especially, were not safe for general use. At that time—now two decades ago—the theory of Burggraeve had just been brought to the attention of this country and had come to the knowledge of only a small fraction of the profession.

In my earlier days in practice it was taught that all drugs should be given in such dosage as to obtain practically a physiologic effect from every individual dose, and the active principles at that time in use were prescribed accordingly. Little wonder that under such a system of dosage unpleasant accidents did follow the use of the potent active principles.

When I was still employing the galenic, whole-plant products, I frequently was disappointed in the results; and this more especially during my earlier days of practice, when but few of the galenics were standardized and but little attention was given to them by the authorities. Not infrequently did I administer a drug with the anticipation of a certain result, to be wholly disappointed. I noticed, however, that when the alkaloids I have mentioned were used the results in the main were satisfactory. Yet, even this did not open my eyes to the possibilities of the active principles as a class.

How I Came to Try the Active Principles

Early in the spring of 1906 I located in a mining-camp, far removed from a railroad point, and where I was obliged to dispense. The matter of freight charges entered into the question, and I did not see how it would be possible for me to handle the galenics without loss to myself. Then a retired physician who lived in the camp solved the problem for me by suggesting that I use the active principles instead of the whole-drug preparations. To this I objected, saying that I should have to learn over again my materia medica; but the doctor insisted that aside from the matter of dosage and the handling of my drugs and patients there would be but very little to be learned anew. So, it being very important that I have a stock of drugs, and at once, I acted upon my friend's suggestion, but at first ordered only a very few items, the sort I had been employing in the form of galenics.

Then I began to study the literature of these principles diligently, and cautiously set about to employ them in my new practice, following the suggestions as enunciated by Shaller, Burggraeve, Abbott, Waugh, and the various other teachers of active-principle therapy. I was very much surprised to note that my results were better and came quicker than had been my experience. After that, acting upon this pleasing discovery, I gradually increased my stock of active-principle granules, adding many items that I either had not employed as galenics or had used with but meagre results. But these latter agents I found as serviceable as were those first procured.

Prior to my adoption of active-principle therapy I had, like the majority of the profession, given but little attention to exact indications and was at the same time guilty of employing "shotgun" mixtures, with the hope that at least one thing in the mixture would "do the work." With the taking up and study of the active principles, I noticed that much stress was being placed upon the use of single simple remedies to meet single indications. This discovery opened my eyes to the fact that I had been in error to a very considerable extent in my practice of medicine. Following up this idea of "a single drug for a single indication," I soon found out that under this principle much less medication was required to obtain the desired results.

While I had always endeavored to be at the forefront in therapeutics and had kept

myself informed as to the newer things or improvements of the older ones appearing on the market, I had not taken cognizance of the fact that the vast majority of the galenic preparations were liable to deterioration if held for any great length of time. But, through my study of the active principles, this important fact was brought very forcibly to my mind, and I now could see why when hitherto I had employed the galenics the anticipated results had not followed.

As a rule, the active principles, as now obtainable, are isolated from their mother plants as absolutely pure, single substances, unassociated by any of the other active or indifferent proximate principles that may exist in the same vegetal drug from which they are extracted. On the other hand, while the major portion of the galenics, especially those containing alkaloids, are standardized, the standard is based upon the percentage-strength of the predominating active principle and without regard to associated principles. This is true of the products of opium, in which the morphine-percentage alone is considered; in those of gelsemium, in which the combined alkaloids are considered as a whole and without regard to the fact that those present are in a practically opposite manner; in those of belladonna, in which the percentage of the entire group of mydriatic alkaloids is considered, without any attention to each individual principle.

This is one of the principal reasons why I prefer the active principles in their pure and simple form. They are free from any possibility of having their action inhibited or modified by any associated principles, and they always produce like results, instance for instance.

Thus, for example, morphine, given alone, invariably produces the same effect, case for case, while, conversely, the whole-plant preparations of opium may show a variance, due to differences in percentage of other associated principles. Gelsemium as a whole may be either antispasmodic or tetanic in effect, as one or the other of the two alkaloids of the plant may predominate. Gelseminine, isolated, is an antispasmodic and may be depended upon as such. I have employed this alkaloid with results never obtainable from the galenic products of the plant. Henbane carries two alkaloids, one of which, hyoscyamine, is a marked antispasmodic, while the other, hyoscine—although being antispasmodic to a certain extent—is very largely hypnotic in effect. I have never obtained the same results from the galenic products of this plant as have followed the use of its isolated principles. Consequently, I prefer the isolated active principles of such drugs for the simple reason that they give me surer and more nearly absolute results.

The Old-Time Galenics Will Deteriorate

It is an accepted fact that the galenics are all liable to deterioration and that many of them are unsafe for use after a very short period of time, regardless of the fact that they may have been standard when manufactured. Today we find the better makers of ergot products dating their labels and advising the doctor and druggist that at the end of a year the preparation will be practically worthless. Ergotoid, properly made, does not deteriorate in this manner.

Not long ago I had a case of mitral incompetency in which digitalis clearly was indicated. I wrote a prescription for an infusion of the drug, but soon after found that the "infusion" was made from a fluid extract. I did not get results, and, upon investigation, I found that the extract had been upon the druggist's shelf for some three or four years. I did not get results after three weeks, at the end of which time I dispensed digipoten, representing the combined glucosides of digitalis reduced to the most simple and stable form. Almost immediate results followed this change, not of the drug as such, but of the product of the drug. The "infusion," as dispensed, did not even produce diuresis, to say nothing of other effects, while the digipoten was followed by pronounced urination, slowing of the heart, increase of blood pressure, and reduction of the dropsical condition, in fact, improvement all the way down the line. I feel sure that, had I employed digipoten from the beginning, these gratifying results would have appeared much earlier.

Not long since I desired to use colchicum. Through an oversight, my druggist had not ordered colchicine, as I had requested, so that I had to order the wine of colchicum. Practically no results following, I investigated and found that this wine had been made from a fluid extract *at least fourteen years old.* In the meantime colchicine had been stocked, and upon substituting the alkaloid for the galenic wine I obtained immediate results.

If one will look over the shelves of the druggist, or over his own shelves if he be a dispenser, and give attention to the galenics there found, he will notice that the vast majority of them show a greater or less

precipitate, or that there are marks or rings on the inside of the container—indicative of evaporation. The former means that the product has decomposed, and the Lord only knows what either the fluid or the precipitate may contain. If but simple evaporation had taken place, the strength of the remaining fluid might be computed; yet, such a product would be unsafe for use, regardless of this. This is especially true of aconite, belladonna, digitalis, opium, besides numerous other preparations carrying potent principles.

The isolated active principle, on the other hand, is a definite chemical, while a reliable concentration is an extract, freed from dirt and other extraneous matter and reduced to the simplest possible and unchangeable form. Because of this, no matter how long an active principle may be retained in stock, by either the druggist or doctor, it is the same in the end as in the beginning. This is another reason why I prefer the active principles.

Today we see the druggist advised to follow the Pharmacopeia or the Formulary, and to make his own preparations. This would be well and good were the druggist so equipped as to standardize his products, which, in practically every instance, is not the case. This is another, and very strong, reason why I prefer the active principles. If the druggist is to follow the advice, there will be but few, if any, standard galenics to be found.

Many druggists buy galenics in considerable quantity because of a saving of cost in handling the larger amounts. Having so purchased, but very few will do away with drugs of this sort, even after a deterioration has been demonstrated, and that is a reason why the active principles are preferable to me.

The Gain Both to Patient and Doctor

If a doctor is a dispenser, the question of economy enters very largely. Even though he may make a charge over and above his professional fees for drugs furnished, it should be his aim to keep the cost of medicine to his patient as low as possible. According to the teachings laid down by our instructors in active-principle medication, only a very few remedies are left with the patient at any given time, as a rule just sufficient to carry him until the time of our next call. On the other hand, it has been the habit of the prescriber of galenics either to write for or dispense more of any one drug than was absolutely required to obtain results. This has resulted in a loss both to doctor and patient.

Under the active-principle teachings, with only sufficient medicine to carry the patient to the time of our next observation, if a change is required, there is nothing to be thrown away. As the active-principle therapeutist endeavors to obtain only the therapeutic effect, less medicine is required, both at the beginning and, as in most instances, throughout the continuance of the case. This likewise means a saving, to the patient at least. I have checked up cases time and again, and have found that many a time when the sickness lasted over a week the patients required considerably less than one dollar's worth of medicine, and none of them received less attention than was indicated. This would not be true of the galenics, even though they may appear of lower first cost. This is a very important reason why I prefer the active principles.

For several years the makers of galenics have been marketing tablets and pills said to contain the representation of certain amounts of the fluid or solid whole-drug products. While some of them may have contained the agents as claimed, it is very probable that in numerous instances the active principles were employed. There was practically no way of demonstrating this to be a fact, as an assay would have shown the active principles, but not the organic substances associated therewith. While such manufacturers undoubtedly offered active products, they were in the main of the "shotgun" type.

I prefer the active principles over and above such mixtures, first, because of the fact that I know what I am employing, and, second, because I am able to make my own mixtures in such a way as to meet indications absolutely, and without the presence of some one or more agents either not indicated or not useful.

My most pronounced preference of the active principles lies in the fact that, when employed to meet indications, they are invariably, as their name implies, *active*. They give results, and give them quickly; and it has been my observation that they have jugulated numerous conditions coming under my observation which, in times past, when employing the galenics, I saw progress slower and linger for a greater time simply because of drug inactivity, and nothing else.

I also prefer the active principles because of the small dosage, the lack either of obnoxious odor or taste that cause more or less nauseating effects, and the fact that idiosyncrasy rarely figures in their administration.

In numerous instances I have found that I have been able to use the active principles when even therapeutic doses of the galenics could not be borne. I have even pushed the agents to full therapeutic effect, without any associated disaster, such as had followed previously when other forms of the drug had been employed.

And yet still another reason why I prefer the active principles is the fact that much less space is required to carry a much larger stock than of the galenics that could be shelved or put into a case. Then they are clean, which is not true of the galenics. The doctor who dispenses is able to carry with him in a comparatively small hand-case upwards of a hundred different agents, and in that way is able to meet every indication, practically, encountered. Not only is this true, but there is another saving, namely, that of bottles and other containers, along with stoppers, which are not needed when the solid active principles are dispensed. This is a reason which every dispenser should appreciate, and appreciating, should avail himself of its significance.

Epididymitis: Its Nature and Treatment

By E. J. ANGLE, M. D., Lincoln, Nebraska

EDITORIAL NOTE.—This is another article in Dr. Angle's valuable series upon "Gonorrhea and Its Complications." Next month he will discuss "Gonorrhea of the Female."

INFLAMMATION of the epididymis is one of the most frequent of the complications of gonorrhea in the male. The condition usually develops during the second or third week of the infection, but may appear at any time after the disease has reached the deep urethra and involves the prostatic follicles, ejaculatory ducts or seminal vesicles. However, epididymitis is not confined to the acute stage of gonorrhea, for latent foci may be roused to activity by the passage of sounds and the overzealous treatment of the prostate gland and vesicles, by sexual excitement or by alcohol.

The exact causes of this complication are not always clear, as it occurs in those who receive local treatment as well as in those treated expectantly by internal medication. Individuals of a gouty or rheumatic habit seem more especially prone to develop epididymitis, while others seem immune, regardless of poor treatment and reckless habits. There is no question but that many cases have their origin in strong injections roughly introduced into the deep urethra. I am of the opinion that epididymitis occurs more frequently in the practice of those who employ the irrigation-method of treating acute gonorrhea. Certain it is that extreme gentleness should accompany all instrumentation and treatment of the genitourinary tract.

Epididymitis usually is confined to a single testicle, the left one being involved more frequently than the right. When both testicles are affected, the second commonly is attacked several days, or even weeks after the first one; simultaneous epididymitis of both sides being rarely met with.

Epididymitis never occurs as a metastasis, but generally is an extension of the inflammation of the deep urethra through the ejaculatory ducts and the vas deferens. Schindler's theory of the reverse contraction of the involuntary muscular fibers of the vas is ingenious and worthy of consideration; for, if correct, this would be the explanation of why it is that so many cases of epididymitis develop a few hours after the passage of a sound or catheter.

Schindler supports his theory by citing the history of a patient who had suffered from six attacks of epididymitis, each immediately following local treatment of the urethra or massage of the seminal vesicles. This patient was given rectal suppositories containing 1-60 grain of atropine, two a day, with the view to paralyzing the hypogastric plexus; this paralysis preventing reverse peristalsis. After this, the patient went through prostatic and vesicular massage without the faintest after-symptom.

Symptomatology

The onset usually is sudden and when in the course of an attack of gonorrhea the patient complains of general malaise, chills, fever, severe pain in the loin radiating down the groin of the same side, we should always suspect a beginning epididymitis, and the testicles should be at once examined for local

tenderness and swelling. Frequently the diagnosis is made by the patient himself, who notices a swelling of the epididymis accompanied by pain along the inguinal canal.

The examination will disclose a varying picture, according to the severity and the stage of the disease. In the subacute type, the inflammation usually is confined to the tail of the epididymis, with a hard nodule of moderate size. In the more acute and inflammatory cases, the entire epididymis is involved and produces a halfmoon-shaped tumor, which encloses the superior, posterior, and inferior borders of the testicle and is several times the size of that organ itself. The overlying skin is dark-red or purplish and edematous. At times a smooth, globular tumor is present, in which the relation of the parts is entirely obliterated. A hasty conclusion would be that the testicle itself is inflamed; but such is not the case, inasmuch as we have to deal with an acute hydrocele, which is present in some degree in nearly every instance, and is due to inflammation involving the tunica vaginalis.

Exceptionally the onset of the disease is sudden, the pain being violent. The constitutional symptoms are pronounced: nausea, vomiting, high fever, sweats and chills. In these cases, local symptoms are well defined, associated with intense abdominal pain, tympany and extreme tenderness over the lower portion of the abdomen. With this group of symptoms, there is usually present, in addition to the epididymal inflammation, a funiculitis, which may be confined to the vas, or, as is more usual, an inflammatory thickening of all the structures of the cord. Upon palpation, the cord frequently is found of the size of the index-finger, extending up the inguinal canal. In fulminant cases, strangulation may occur.

Where the involvement of the cord precedes the epididymitis, the pain and tenderness of the abdomen are suggestive of peritonitis or appendicitis, and the diagnosis may not be perfectly clear until the local symptoms are well established.

The discharge of acute urethritis ceases at the appearance of the epididymitis or may precede it a day or two. As the inflammation declines, pus usually reappears at the meatus, while the two-glass test again shows turbid urine in both.

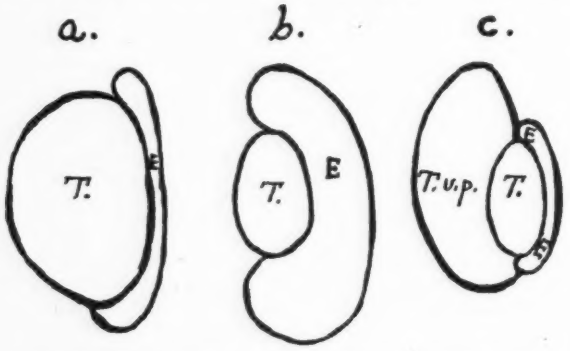
Not infrequently it happens, as all experienced clinicians know, that an attack of acute epididymitis brings about a cure of the gonorrhea. Whether this fortunate result is due to the destruction of the gonococci by the increased body-temperature or to the production of antibodies, is not known.

Diagnosis and Prognosis

The diagnosis usually is clear. Inflammation of the epididymis, in the presence of posterior urethritis and other characteristic symptoms of gonorrhea, leaves no doubt as to its origin. It should be clearly appreciated that the gonococcus is not the sole cause of epididymitis, as it may result from any of the pus infections (as for instance by streptococci or staphylococci) of the bladder. Epididymitis at times is a quite frequent disorder during grip epidemics, the infection reaching the testicle through the blood stream.

Orchitis is rarely associated with urethral inflammation, but is caused by traumatism, cold, mumps, measles, and other constitutional disorders and infections. In orchitis, the swelling involves the testicle proper and forms a moderate-sized tumor, which is oval, smooth, quite hard and very tender. The pain is very intense and not influenced by position, as in epididymitis. Its course is slower and atrophy of the testicle is a frequent result.

Chronic epididymitis may be confused with syphilis or with tuberculosis of the testicle. Syphilis is usually in the form of a gummatous infiltration and involves the testicle proper, which slowly enlarges to a tumor of considerable size. This tumor has a smooth surface, is quite firm and is entirely painless. Tubercu-



Schematic Representation of Scrotal Tumors (After Koenig)

a, In acute orchitis; b, in acute epididymitis; c, in hydrocele; T, testis; E, epididymis; T. v. p., tunica vaginalis propria

losis usually starts in the head of the epididymis and is always preceded by tuberculous infiltrations of the cord, prostate gland or seminal vesicles. In the case of tuberculous subjects, there is no doubt that gonorrheal epididymitis predisposes to the later development of tuberculous foci in unabsorbed inflammatory nodules.

Instances of epididymitis affecting undescended testicles have been mistaken for strangulated hernia or inflammatory bubo.

The termination of epididymitis may be in suppuration, complete resolution, or the organization of the inflammatory exudate and the formation of a fibrous nodule. In time past, it was taught that suppuration seldom occurs in acute epididymitis; but recent surgical measures have shown the presence of pus in practically every case, in amount varying from a drop to half a dram or more.

Perfect resolution is the exception, a hard, fibrous nodule of varying size usually remaining for life. As a result of the compression of the tubules by the contracting fibrous tissue and more or less thickening of the convoluted tube, the semen is obstructed in its passage from the testicle, and, if the affection is bilateral, sterility occurs in 40 percent of the cases. Sexual vigor is not affected.

Treatment: Prophylactic and General

The early local treatment of acute urethritis is imperative, and, if its abortion is not feasible, the limitation of the infection to the anterior urethra should be our aim.

Gonococcic bacterin, in doses of 25- to 50,000,000, should be given every three days when the infection invades the deep urethra. A snug-fitting suspensory should be worn throughout the attack of gonorrhea. It is needless to mention the necessity of abstinence from sexual intercourse, alcohol, and severe muscular strain.

As to general treatment of epididymitis, the patient's diet should be restricted to milk, liquids, and cereals. At the onset of the attack, the patient should be given a brisk purge, preferably a saline, and this should be repeated every day or two. Aconite is wonderfully efficacious in the early period of an attack, one to three drops of the tincture, or corresponding doses of the active principle can be given every hour until the physiological effects of the drug are noted. With the equalization of the circulation, decided relief of pain is experienced.

Occasionally codeine, phenacetin, aspirin or veronal are necessary to relieve pain and restlessness in nervous subjects. I have found sodium salicylate, in 5- to 10-grain doses every three to six hours during the first week, more nearly meeting indications than any other drug; it relieves the pain, reduces the temperature and acts as a urinary antiseptic. Urotropin or belladonna [atropine] may be added, if desired.

Gonococcic bacterin is indicated in every case of epididymitis; an initial dose of 25,000,000 should be given when the patient is first seen, and be repeated every other day. This dose is gradually increased to 50- and up to 100,000,000.

Small doses (2 to 10 grains) of potassium iodide or of iodalbin are useful to promote absorption, this remedy to be given in the latter period of the disease.

Local Treatment

The local treatment consists in rest in bed, elevation of the testicle, and heat and medicinal applications to the inflamed organ. Rest in bed is of the greatest importance and should be observed, if possible, in all but the most mild or subacute cases. Elevating the testicle is next to rest in importance. This object is best secured either by placing a small, firm pillow, covered with rubber cloth, between the thighs or a T-bandage of sufficient width easily to support the scrotal contents. The testicle should be elevated as high as possible, thereby relieving the tension on the spermatic cord and lessening congestion.

I mention the ice-bag only to condemn it. Ice to the scrotum not only is painful but may produce gangrene and sloughing. In every instance which has come under my observation the inflammation has been more prolonged and the induration greater and more difficult to absorb than where the patient was treated with moist heat.

These heat applications can be made in several ways. Many prefer the old-fashioned flaxseed-meal poultice, the magma being spread on a piece of linen to the thickness of an inch, and sprinkled with laudanum if desired. The poultice is applied direct to the scrotum, as hot as possible, and should be changed every two hours. The same amount of heat can be obtained in no other way. My own preference is to wring a compress of fifteen thicknesses of cheese-cloth out of boiling water and to sprinkle on its surface, before applying, a mixture consisting of 2 ounces each of tincture of opium and solution of lead acetate, and 4 ounces of alcohol. Oilsilk or rubber cloth is applied over the compress, to retain the heat, and over this a hot-water-bottle. Lead and opium wash or a 2-percent

solution of aluminum acetate, either cold or warm, may be applied by means of saturated gauze, changing whenever the gauze becomes dry. Magnesium sulphate in saturated solution has been without value in my hands.

In mild and subacute cases, where it is not so essential to put the patient to bed, a different course is pursued. Several times a day a 25-percent ointment of guaiacol in equal parts of lanolin and vaseline is applied to the affected parts. The addition of 10 to 20 percent of ichthyol and belladonna ointment renders the salve more soothing and astringent. Over the salve a good thickness of cotton is placed, over this a layer of oilsilk or rubber tissue, and finally a "Sport" bandage, such as was illustrated in my article on acute urethritis. (May, 1912, p. 492.)

Doctor Philip, of Hamburg, recommends ichthyol in subacute cases, and after the subsidence of the acute symptoms in others. His method of application is as follows:

The diseased half of the scrotum, including the skin over the cord up to and beyond the inguinal ring, is painted liberally with pure ichthyol and then covered with a moderately thick folded wad of cotton. The usual snugly fitting suspensory is then applied. Since the skin over the cord and that of the scrotum form a firm sheath, a dragging of the testicle with the diseased epididymis is impossible. It is sufficient to cut short the hairs over the scrotum; shaving is not necessary. After four to five days the bandage is loosened and removed by means of warm water and a new one applied.

In this affection, ichthyol again has demonstrated its valuable properties as an antiphlogistic and absorbing agent of high degree. The infiltration disappears rapidly and the patients no longer complain of pain, even though they follow their vocation. The final result is said to be very favorable.

In the declining stage, the patient should remain in bed until his temperature has been normal for two days, or, better, until he can stand on his feet for five minutes without a return of the pain in the groin or testicle. The "Sport" bandage should be worn for at least a month after the patient is allowed to go about.

Induration is best absorbed by application of the following ointment: Belladonna ointment, drs. 2; ichthyol, drs. 2; iodine ointment, dr. 1; lanolin, drs. 3. This should be applied with gentle massage to the indurated area. Iodine-petrogen also is a useful application at this period, and should not be lightly neglected.

All local treatment of the urethra should cease at the beginning of an attack of epididymitis, and must not be resumed for several weeks after.

Operative Treatment

If hydrocele is present to a considerable extent, it should be relieved either by puncture or aspiration. Operative procedures of one form or another have been more or less in vogue since the middle of last century. The simplest of these is puncture, which consists in introducing a sharp pointed tenotomy-knife into the most prominent part of the epididymis to the depth of a third to one-half of an inch. The pain and tenderness are relieved and the course of the disease is materially shortened if this is done early. An antiseptic dressing is applied to the seat of the puncture, of course.

The operation of epididymotomy has steadily grown in favor in recent years with genitourinary surgeons. Hagner's operation is as follows:

"An incision 6 to 10 cm. in length is made at the juncture of the swollen epididymis and testicle, through the scrotum down to the tunica vaginalis, which latter is opened at the juncture of the epididymis and testicle. After the serous membrane is opened all the fluid is evacuated. The epididymis is then examined and multiple punctures are made through its fibrous covering, especially over those portions where the enlargement and thickening is greatest. The knife is carried deep enough to penetrate the thickened fibrous capsule and enter the infiltrated connective tissue. If pus is seen to escape from any of the punctures, the opening is enlarged and a small probe inserted in the direction from which the pus flows, and, with a fine-pointed syringe, the cavity is washed with a 1 : 1000 solution of corrosive sublimate, followed by a normal salt solution. A cigarette drain is provided. A continuous catgut suture closes the tunica vaginalis and a lock-stitch horsehair suture the scrotal skin. Moist bichloride of mercury dressings and a scrotal support to the testicle complete the process."

This procedure to me seems unduly radical and I believe all the possible benefits may be obtained by a more simple method.

The procedure which I follow and recommend is that of Bazet-Gross. The swollen epididymis is firmly held in the left hand and an incision of from one-half to one inch is made over the most prominent portion of the swollen nodule of the globus minor. The incision is made as close to the median raphe

or ligamentum scrotale as possible and parallel with it. The incision is continued through the hard, fibrous tunica albuginea—which at times will be found half an inch in thickness. Care should be taken not to cut the tubule. When the tubule is reached, a probe is introduced into the body of the epididymis from a half to an inch and a half and the foci of pus evacuated. The walls of the globus minor are then attached to the skin with a continuous suture. The wound is either packed with iodoform gauze or a small rubber drainage-tube inserted, over which is placed the customary dressing. The latter need not be changed for two to three days. General anesthesia should be always instituted.

The advantages of the operation are, first, prompt relief of pain and fever; second, rapid disappearance of the swelling of the epididymis and cord; and, third, a shorter period of convalescence. Very often the patient is able to go about his duties, wearing a properly fitting suspensory, in the course of two or three days. It is my practice to follow this procedure whenever the symptoms do not yield to the ordinary treatment in four or five days, and also in the recurring and relapsing types of the disease. The consensus of opinion is that epididymotomy decreases the tendency to sterility, whence, consequently, the operation is especially adpated for all subjects having epididymitis who have had a previous infection on the other side.

Pus is present in every well-developed case, and there is no reason why the same principles which govern its evacuation in other territory should not apply here. The results of this operation are so uniformly successful that it should be given a permanent place in the treatment of epididymitis wherever it seems reasonably indicated.

The Use of the Obstetric Forceps

A Chapter of Practical Suggestions

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois
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EDITORIAL NOTE.—Last month, in the first installment of this paper, Dr. Rittenhouse discussed the general attitude toward the use of the forceps in childbirth, the proper and improper employment of the instrument, and the easiest of the various operations. He now proceeds to a discussion of "the instrument of choice."

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The Instrument of Choice

IF a beginner were to ask half a dozen obstetricians for advice as to the best instrument to buy, he would probably get half a dozen different opinions. One would advise him to get a short forceps for general use, and a long one for those cases where assistance is needed at the superior strait—the "high operation." Another would put much stress upon the need of possessing an axis-traction instrument.

My own equipment consists of one short and three long instruments, the latter being a Hodge with medium curvatures (both cranial and pelvic), a Hodge with very decided curvatures (both cranial and pelvic), and an axis-traction Tarnier. In actual practice, I find that the second-mentioned (the Hodge of medium curvature) answers every purpose. It can be used either high or low in the pelvis, and, if axis traction is desired, I get it very satisfactorily by passing a yard-long strip of gauze through the fenestra of both blades. An assistant can then make traction on the gauze fillet, in the direction of the coccyx.

Some doctors are much attached to short forceps. Their only advantage, so far as I have used them, is that they are small, light, and easy to carry. The higher up in the pelvis the head is, the more difficult it is to use them, while the long instrument can be employed anywhere, from the vulva to the pelvic brim.

The instrument with very decided curves in the blades is dangerous, except in skilled and careful hands. If the cranial curve is too sharp, the tips of the blades may inflict injury upon the fetal head. The only advantage of a decided cranial curve is that it prevents the instrument from slipping; but, as slipping is usually due to maladjustment,

the remedy is a matter of mechanism rather than of the shape of the forceps.

More dangerous still is the instrument with an exaggerated pelvic curve. Twice I have seen vesicovaginal fistula caused by unskilful handling of a forceps of this shape. It can readily be understood that depressing the handles throws the tips of the blades toward the mother's pubic bone, and they may pinch the bladder so hard against the bone that they cut through it like knife-edges.

The busy doctor finds it advantageous to modify, in the direction of simplicity, the outfit which he carries with him daily. Most of us are content with a single forceps to carry constantly in our obstetric bag, and for that reason find it best to carry that kind of instrument which meets our wants in the greatest number of instances.

In my own experience, the medium-curved Hodge has answered every requirement. I have an axis-traction Tarnier, but have never put it to use, because, like the policeman, it is not at hand when wanted. Whenever axis-traction was demanded, rather than to delay matters by sending for my Tarnier, I have slipped a gauze fillet through the fenestra of my Hodge, and found this expedient to work satisfactorily. So my Tarnier still possesses its original polish.

How Best to Apply the Forceps

The application of the forceps at the inferior strait is so simple a proceeding that I need scarcely go into all its details. I assume, of course, that proper sterilization of the instrument and of the operator's hands has been attended to. A lubricant may be used, if desired, but is not really necessary, as the natural lubrication of the parts is sufficient. Lubricants often are of doubtful asepsis, unless the doctor has personally supervised their sterilization. I myself long ago abandoned their use on the obstetric forceps.

The position of the patient will be according to the desire of the operator. Many prefer to have the parturient woman placed across the bed, with the hips brought to the edge. But this is not essential. I usually allow her to lie lengthwise of the bed. Especially do I prefer the longitudinal position when there is a scarcity of assistants, as so often is the case in family practice.

With the transverse position, it is difficult to get along without an assistant to support each limb. When short of help, a good expedient is to support the limbs in the lithotomy position, by means of a sheet folded diagonally, rolled into a rope, passed over the shoulders and behind the neck, and the ends tied to the knees. With this harness, I have made many a delivery, one assistant (often the husband) giving the anesthetic under my watchful eye and according to my directions. No man is really properly equipped to do general family practice among the people until he has learned to do, not merely two things at once, but half a dozen or more, all at the same time, besides watching, perhaps, two or three persons in addition.

Never Use Force

In applying the blades at the inferior strait, no force should be exerted: they almost will fall into position by their own weight when properly directed. A curving, semicircular sweep around the fetal head is the one essential movement. If any obstruction is encountered, it should never be overcome by force, but rather by withdrawing the blade a little and then slightly varying the direction of the movements. The two most common obstructions that may be encountered are, first, the tip of the blade catching an ear, and, second, getting outside of the uterine cervix when dilatation is not complete. In either case, the application of force would inflict injury.

After the blades are in position, it sometimes happens that they do not lock readily, owing to their not being in perfect apposition. Here, again, force must be avoided. By a little gentle manipulation, especially by depressing the handles toward the perineum, the locking can be accomplished without violence.

In making traction, the chief points to be observed are the following: (1) The traction should not be continuous, but intermittent with short periods of rest; (2) the pelvic curve should be borne in mind, and the direction of traction changed as the head advances, allowing the handles to rise higher and higher until at the moment of delivery they lie on the front of the abdomen (the operator's sense of touch will tell him when the handles are in the position of least resistance); and (3), after the vulva begins to dilate, the progress should be slow enough to give the tissues ample time to stretch and thus avoid laceration of the perineum. Indeed, I often make use of the forceps for no other reason than to prevent laceration, since the instrument gives one perfect control of the head and thus prevents that sudden expulsion which is the cause of so many lacerations at childbirth.

As a rule, no great amount of force is required to bring the head through the inferior

bony ring. In a funnel-shaped pelvis, that is, where the inferior strait is markedly smaller than the superior, it may be necessary to employ very powerful traction. But even in such cases moderate intermittent traction for a considerable time is more safe than very hard pulling, because the gradual molding of the shape of the head making it longer and narrower will greatly facilitate the delivery.

It is, furthermore, important to observe whether rotation has taken place, for, if it has not, much effort may be wasted, with corresponding danger of injury. Palpation of the sutures and posterior fontanelle will show whether the occiput has rotated to the symphysis pubis. If it has not, readjustment of the blades, and combining a slight twist with the traction usually will complete the rotation, after which delivery will be much easier.

In all applications of the forceps higher up, it is even more important to bear this fact in mind, because under these circumstances it is certain that rotation has not occurred, while it is equally certain that it cannot occur when the child's head is in the grip of the forceps except with the aid of the operator.

(*To be Continued.*)

Autotoxemia and Acidosis

By C. ELTON BLANCHARD, M. D., Youngstown, Ohio

EDITORIAL NOTE.—Here is a distinctly practical paper, discussing a symptom-complex which is exceedingly common, yet too rarely recognized and its importance seldom appreciated. It will pay you to read it.

I AM fully aware how difficult it will be to offer the readers of this journal anything new on the subject named in the headline. Current medical literature for the past fifteen years has carried many valuable discussions, reports and opinions. Some good men have published their pooh-poohs and ha-has. Some have said it is impossible to asepticize the thirty-two feet of the alimentary canal; hence, intestinal antiseptics are useless in typhoid fever, enteritis, and other conditions of similar nature. Search your library; consult the texts, and see how little you find about this autotoxemia-acidosis subject.

When a physician made bold to declare that any and all of the disorders here enumerated—namely: most of the symptoms manifested by the stomach and by the average diagnostician called indigestion, gastric catarrh, dyspepsia, gastralgia, etc.; all those intestinal symptoms, including enteritis, interstitial catarrh, constipation, diarrhea, dysentery, etc.; those of the liver and kidneys, called by various names; those of the skin, called herpes, urticaria, eczema, psoriasis, etc.; those of the nerves, called anesthesia, hyperesthesia, neuritis, neuralgia, etc.—were caused by the fermentative and putrefactive changes and in association with faulty elimination of the alimentary waste, he was promptly called an empiric theorist, a pseudo scientist, or by some less kind name. Then, if to his list he added most forms of rheumatism, gout, arthritis (not infectious), and a few other things, he was laughed out of court.

Year after year doctors have gone on treating symptoms. The good brother of one school has had it as a classic truism, "Cure the symptoms, and you have cured the disease." Examine the prescription files of any drugstore, as I have done, and you will find that seventy-five percent of drugs prescribed and used are aimed at symptoms instead of at causes. Study the trade-lists from which dispensing physicians order their drugs, and the result is but little better. Drug-making concerns prepare what will sell. They prepare to supply a demand. The demand is for things thrown together, from two to a dozen ingredients, and named "dyspepsia" or "diarrhea" or some other kind of cure. The study of causes and the knowledge of therapeutics is a lost art to a large portion of the profession.

I well remember how our professor of skin diseases at college used to say: "Gentlemen, there are but two ways to treat eczema. If it is fiery and secreting, sooth it down—dry it up. If it is dry and dormant, stir it up, stir it up!" This good man is dead now, so I shall not harm him by quoting his words.

This has long been the routine formula of the average physician, and when I say average physician I mean the rank and file, or those doing the family practice in general

medicine, with a snatch or two each day at what few office-cases drift in. If pain troubles, quiet it. If the skin itches, apply some salve, wash or anything to soothe it. If a sore is seen, heal it up. If a nerve is crying out from some irritation, jump on it, blister the skin over it so the skin will be so sore that the patient will forget the nerve; or rub it, deaden it with morphine, do anything. If that fails or all these things fail, then cut it out!

What would we say of dentistry if the dentist, when a tooth protested against the invasion of an infection by sending up a decent ache, instead of cleaning out the cavity and sterilizing it and then replacing the lost portion with some substance that repaired the tooth mechanically, should extract the tooth? What, indeed?

We have been practicing medicine along the line of palliation, and with surgery have swung to the other extreme in radical efforts to extirpate causes by the removal of organs and parts. Medicine has been giving anodynes and opiates for the several toothaches of life, and surgery has been too busy with the extracting forceps.

It is because of these things that I begin my task with fear and trembling. I know the rut-bound tendencies of the older men and the all-wise, ultrascientific, soul-puffed attitude of the younger men. Some of the latter have studied in Ewald's or some other clinic and come home full-fledged "stomach-specialists." They can extract a test meal with dexterity and finish. They can determine the hydrochloric-acid conditions and often make a brilliant diagnosis. Some of these shining lights of the newer school hold teaching positions in colleges. Such work is good publicity and builds up a following. They talk for days on pathology, symptoms and diagnosis, then close the subject with a few brief remarks on treatment. In some cases it is just this: "Very little can be done for these patients."

During the past five years I have treated more than one thousand cases of autotoxemia with such uniformly good results that I feel justified in adding my experience to the records of those who have gone before. It would be useless and tedious to detail even one hundred cases, with all the various manifestations of this condition. I shall offer you a typical example or two and let it go at that.

The Multitude of Aspects Presented by Victims

Your patient comes complaining of some one of many symptoms. He may be in one of the several stages of the trouble. Secondary complications following the first cause, such as liver or kidney symptoms, may send him to you. It may be headache, pains in the stomach-region or stiffness of the muscles in the morning. Possibly it is an itching of the skin, or an eruption, like urticaria, herpes, etc. Now and then one will come because of a stinging sensation, like nettle-rash, or a creeping, crawling sensation here and there. Some will insist they have some kind of an insect in the skin. Others may direct your attention to gas eructations or flatulence. Frequently they talk of "heartburn," "waterbrash."

The typical patient is usually none too well nourished and may be more or less anemic. The skin is usually turbid, often jaundiced, frequently sallow. The tongue is coated, in some all over and in others only at the base. When the acidosis condition predominates, the coating is yellow or white, thinly or thickly coated, according to the degree of toxemia. The patient usually complains of the "dark-brown taste" in the morning. He feels, he says, as if he were a hundred years old when he awakes from a night's sleep. This fully or partially passes after exercise, although languor, depression and lassitude more or less persist all the time. He has headache a good deal, frontal and sometimes occipital—always is dull-headed and frequently dizzy, with "spells, when things get black" or "the whole world is turning about." One patient of mine felt the bed rising and falling as if in the berth of a ship at sea. The old and usual treatment for these vertigo signs has been calomel and purge.

Our typical patient is usually constipated, though at times a diarrhea occurs. If the irritation of this invasion of bacteria into the small intestine has caused a well-marked catarrhal enteritis, we may have a persistent diarrhea or dysentery. There is nearly always pain after eating, coming on at once or after an hour or more, with gas belching and acid eructations. This fermentation may go on, with distressful flatulence and with colonic distention. A craving for food, often a well-marked hyperorexia is present.

Physical examination usually elicits tenderness over the epigastric region, which may also be manifested all over the abdomen, but not usually. Pain is frequently referred to the back or to the subscapular region of the left side. Tonic spasms of the pharynx or lower down the esophagus often occur, giving the patient a feeling of a lump in the throat, or somewhere, that cannot be swallowed.

Heart, lungs and other organs may be normal, though frequently the liver is enlarged and pain or tenderness is mentioned over the kidneys in the back.

What the Urine May Tell

Study of the urine throws much light upon your diagnosis. Fortunately we have one ptomaine that is partly excreted by the kidneys, and, in the absence of other causes, it clinches the diagnosis of autotoxemia. I refer to indol, usually spoken of as "indican." There are others, besides, such as butol, and skatol.

The presence of indol may be ascertained by several reactions. The usual indican test is simple and quickly made. Mix 2 or 3 drams of the suspected urine with an equal volume of hydrochloric acid. To this add a few drops of 5-percent potassium-permanganate solution and mix well. Now add a dram or less of chloroform, shake, and allow the chloroform to settle at the bottom. If indol is present, you will find the chloroform stained blue by the indigo-blue set free by the reaction. There being no malignant condition, no typhoid fever, no interstitial or glomerular nephritis, and, in the case of children, no intussusception, indol is set down as caused by the putrefaction of proteid food in the small bowel.

Often present at the same time we have a high acid-index in the urine and low alkalinity of the blood. There is present what has been termed "alkali hunger." To determine the acidity of the urine also is easy. Several quantitative tests are available. That similar to the acid tests for stomach contents is the most practical.

A test tube graduated to fifths of a Cc. is used. Take 10 Cc. of the urine and add a drop of saturated solution of phenolphthalein in 50 percent alcohol. Then add drop by drop decinormal soda solution until a light-pink color appears. It is best to shake after each drop, so as not to go over the mark. Each one-fifth degree on the graduated tube means the amount of soda solution required to neutralize 100 Cc. of urine. Normal urine will demand about 35 degrees on such a scale if the specific gravity is 1015 to 1020 and 1200 Cc. the 24-hour quantity voided. A patient showing 50 to 200 degrees of acidity is not uncommon when presenting the clinical picture I have outlined.

For more detailed elaboration of all these laboratory tests, and the technic, I must refer you to the works on laboratory diagnosis. I am not writing an advertisement for books, but I myself have used with great profit Ogden's "Clinical Examination of the Urine" (Saunders). This book will give you what you may need. These two simple tests can be made in two or three minutes while your patient waits and should be a routine procedure.

A General Outline of Treatment

It matters not what particular symptom drove your patient to seek your help, the treatment, with slight modifications, is the same for all. This treatment consists in a complete cleaning out of the bowels, then intestinal antiseptics and antacids. Some writers have advocated the simple expedient of giving sodium bicarbonate before meals. Those who would be satisfied to prescribe or dispense sodium bicarbonate have not done all they should.

If my patient presents no skin complications, or other kind, I usually follow this program: Thorough evacuation with saline laxatives. If needed because of liver conditions, the saline may be preceded by calomel, podophyllin or other cholagogs. Then follow with the intestinal antiseptics and the alkalines. The ideal combination is now prepared by associating sodium sulphocarbolate, sodium sulphate, and sodium bicarbonate. To this may be added kidney and liver tonics, such as colchicine, juglandin, etc. Sodoxylin is an excellent preparation. One might have this combination made up for him or he might make it himself, but no extemporaneous effort can equal that made by the granulating process of successful drug makers. My custom is to give a well-heaped teaspoonful half an hour before meals, washed down with a glass of water.

If to this we add a good diuretic, taken between meals for a week or two, it will help to "flush out the sewers." I often use a combination of digitalin, squills, potassium nitrate, and buchu, or, also, digitalin and lithium benzoate. The higher the acid-index, the more lithium benzoate is given.

An excellent liver tonic is the calomel, podophyllin and bilein compound pill. When you have done this, you have done all that is necessary in the usual case.

If skin lesions of the herpes type attend, I usually do nothing, except to prescribe some skin ointment if scratching has made open sores. If it is of the eczema type, I add the triple arsenates and nuclein after meals. Locally, any good skin ointment will heal up the open lesions after the cause is removed. Such symptoms as headache,

formication, neuralgia, etc., I seldom attempt to combat, as they usually disappear in a few days.

Sometimes, when the digestive power seems below par, I try to help it along for a while with one of the several digestive combinations available. How much good pepsin, papain, diastase, pancreatin, etc., will do is very problematical. I have used many thousands of the bilein and pancreatin compound tablets where intestinal digestion seemed at fault, and seemingly with good results. In cases associated with marked epigastric tenderness I use papain and hydrastis compound, and it seems to help some. However, I do not continue these digestive aids for long, for, if effective, they are not needed, and, if our alkaline treatment succeeds, as it usually does, the natural digestive secretions will return and do their work in the natural way. I use these so-called digestive tablets for about the same reason that we used to wear two buttons on the back of our coats!

I am fully aware that many theoretical scientific criticisms may be offered by the ultrascientific reader. However, results are what we must use as a means to judge the value of any treatment. I am offering you the story of more than one thousand cases presenting this clinical picture in one of several phases and stages, and nearly all these patients made good recoveries. Many of them were considered very remarkable cures by the patients and their friends. A large number of these people had been drugged for years symptomatically for skin troubles, neuralgias, rheumatism, "liver trouble," indigestion, and for troubles under a dozen other names given by former physicians.

Some of these patients have been babies in whom the condition had been called malnutrition, marasmus, etc. Many grateful mothers will tell you that I have saved their babies, when they were expected to die. The same treatment was used, modified, of course, to suit the infant's age.

"How to save the babies" will make another story, and, if you have been helped by this humble effort and will so indicate, either to me or to the editor, I shall give you this some other time.

The only important principle in the cure of autotoxemia is to clean out the alimentary tract, to asepticize the digesting portion of it. This will stop the fermentation and putrefaction of the food and the formation of foreign acids and ptomaines. With or without help, the symptoms will soon disappear. You may not care to use the same agents I have employed. If you know of a better way, let us learn it. To use that homely idiom, "There are several ways to skin a cat," or that other, "Many roads lead to Rome." I have told you my way. Let us know yours. If you succeed, it must be by the application of these same therapeutic principles.

The Hygienic Treatment of Disease

Especially of Pneumonia and Bowel Trouble

By J. WILLIAM WATSON, A. M., M. D., South Braintree, Massachusetts

THROUGH the recommendation and efforts of the "Committee of One Hundred" and the American Medical Association, medical and hygienic topics are being brought before the public in open meetings. The present-day tendency is to educate the layman so that he can take care of himself or at least prevent disease. Everywhere there is a general awakening along these lines. The laity demand simple methods in the treatment of illness; however, they are loath to live the simple or the hygienic life in order to keep well.

Catching Cold Due to Imperfect Elimination

This attitude possibly is due to a lack of knowledge of the causes of illness, especially of such ailments as a "common cold." The usual idea of laying a cold to an exposure or a draft of air is all wrong. The real cause is much nearer home. One authority has stated that the greatest number of diseases that flesh is heir to is due to "retention," and by this he means the holding back of poisons and toxins within the human economy. With simple and hygienic living, and all our organs functionating properly, thus ensuring elimination of waste, there is no improper retention of the products of decomposition derived from the foods ingested.

The truth of this I have been able to demonstrate by actual experience. A coryza has followed a heavy meat meal. A prostrating pharyngitis appeared after eating

heartily of candy, ice-cream, and potato chips. Chills and fever followed by pneumonia were traced to eating freely of fresh pork and doughnuts. All will agree that none of these meals were hygienic. In every instance these things were eaten when the person was tired. Hence the result could not be anything else, in the presence of a poor digestion, than the formation of filth that clogged up the system; this expressing itself in the socalled "common cold."

From the observation of others as well as from my own experiments, I am convinced that "colds" come chiefly and possibly entirely from wrong eating.

The blood traveling so swiftly through the body, it is not surprising that the waste products are rapidly carried all over and deposited in the weakest parts, and the "cold" or the illness resulting from these retained poisons comes on suddenly. But just as swiftly will the unhampered blood stream carry away these deposits, under proper treatment, when the source of supply is cut off.

Hence, in the hygienic treatment of a "cold," it is best to stop all eating during the acute conditions, especially if there is no desire for food (as usually is the case), and wait until hunger comes on; meanwhile taking a mild blood purifier with plenty of water, either cold or, preferably, blood-warm. This medicated water dilutes the muddy blood stream, which thus carries away the noxious deposits that produce the present illness. Personally, I never feel hungry when I have a cold. My experience has been that none of my colds lasts longer than two or three days if I at once stop eating, purify the blood, and wait for the call of appetite (better called hunger) before tasting food. It has been proved many times, and now it is an acknowledged fact that we all eat too much, and possibly, in many instances, the wrong kinds of food.

Wrong Eating and Rheumatic Troubles

The "uric-acid diathesis," with its long train of ills, and of which rheumatism is a marked example, is directly traceable to wrong eating. In one of the worst cases of chronic rheumatism in my practice the patient had been in the habit of taking every morning three raw eggs beaten up in a pint of milk. He had prepared and had gotten away with this breakfast and was on his way to work in the remarkably short time of five minutes. After a while he could not work, in fact, could not get up from bed. He was put on a low protein regimen, fruits were substituted for eggs and milk, his blood was purified, and his heavy red under-flannels (still worn in July) were ordered removed; and in less than ten days he was back to work again. It is three years now and he had not had any relapse, has no return of his rheumatism, and has not lost a day from his work. He was taught to live properly, and his good health for three years shows that he has followed my instructions.

Then, too, as all of our food and nearly all of the medicine we take enters our systems by the avenue of the mouth, it is eminently proper for us to look in that direction for the pregnant source of many of our diseases. It is easy to comprehend that most bowel troubles can be laid to erroneous alimentation. But it is hard to realize that pneumonia can be produced in the same way—that is usually laid to a "draft" or "exposure," albeit that time and time again people have suffered from inclement weather and not experienced any ill effects. "Their resistance has been good," you say. Nevertheless, given a time under continued unhygienic living, and the resisting power breaks down and the "draft" or "exposure" is followed by a pneumonia.

We Do Not Assimilate All We Eat

The exposure or draft is not the cause, but is merely the last straw to make the presence of disease in the body manifest. Commodore Peary and Dr. Cook tell us that the Eskimos, at home, are never ill, although to the unthinking vegetarian their diet of meat and fat blubber appears to be very unwholesome and conducive to disease. But we must remember that on account of the cold and their exercise they are able to assimilate all that they eat. In our environment we eat very nearly the same way, in comparison, as do the Eskimos (meat three times a day, to their twice), but with less cold weather to combat and less exercise, we do not assimilate all we eat; hence we American people have become a diseased race, famous the world over for our "dyspepsia" and its consequent train of diseases.

Even the vegetarian is not free. Should he overeat of even his simple food, he can not assimilate it all, and the rotting material thus left in his system lays the foundations for disease. You may ask, how do I know it rots. Well, just watch the stools of your patients and you will mighty soon be disgusted with the stench. Place some foods out in the heat of the sun. In a short time you will note that they soon become bad

and present the same odor. The latter you know is rotten and by analogy you must regard the former as rotten, too. When our summer heat records a temperature of 98 degrees we are generally uncomfortable, while our usual foods have to be carefully preserved on ice. We must not forget that in the stomach and bowels a higher temperature than 98° F. is maintained night and day, so food that is not taken up can not but decay, producing headache and stools that smell badly, giving the breath a foul odor, and blemishing the skin with pimples and boils.

The weakest parts of our body are the ones usually affected, depending possibly upon the season of the year. Bronchial and lung troubles in the winter and diseases of the intestinal tract in the summer. However, disease is no respecter of seasons or of bodily organs.

Overdoses of Poison and "Overdoses" of Food

In the winter, pneumonia is the most to be dreaded; still, taken early and the nature of its cause more thoroughly understood, it is shorn of many of its terrors. On account of the close relationship of the sympathetic nervous system to all parts of the body, any organ is apt to become affected by unassimilated rotting material. If a person takes poison in overdoses, he soon feels it all over his body. If the proper dose is taken, there is in due time a feeling of well-being.

All these being facts well known, it is very reasonable for us to think that the food we eat could act in the same way. When we eat the right kind and the proper quantity in the proper way, there is a decided feeling of well-being, but an overdose of food produces heaviness, mental inactivity, and sometimes pain in the epigastrium. People should eat in such a way and such things that, when the meal is over or at any other time, they would never realize the presence of such an organ as a stomach, any more than they would realize the presence of heart, lungs, kidneys or spleen.

When one eats rightly and lives properly, the stomach never makes its presence known; but it becomes sensitive to the least abuse; which, if heeded, leads to perfect health. To these facts thousands now living the hygienic life will testify; hence it is easy to see the cause of many, if not all, diseases.

The hygienic treatment of disease, then, would be to remove the cause. "But," you say, "no one can go without eating." True, not for much more than sixty or seventy days (the longest time on record is about seventy-five days), but the eating can be regulated.

Now, I do not mean that the patients should be "dieted." That is what many are doing now, and as a result their systems are being starved because they do not properly assimilate, and the nonassimilation is the disease. Unconsciously physicians realize this, for usually the first thing they do for treatment is to administer a physic. "Clean out and keep clean" is their slogan, and it's right. But they forget the "keeping-clean" process when they order food (nourishment) "to keep the strength up."

Can any wise, thoughtful physician expect a fevered stomach and bowels (hotter than any tropical climate) to digest food? The patient is often ordered to "drink" milk. As a result, a large curd of bad cheese is formed in the stomach, and because it can not be dissolved and digested it is vomited up. And then the physician wonders about the sour stomach. But it is the function of the stomach to be sour. It is the "sour" that curdles milk.

Milk should never be used as a drink. Taken in small quantities and fully insalivated, it makes a finely divided curd that is easily digested. If the large curd should be retained, it decays, and then you say, "What a bad, feverish odor there is to the breath today;" and you are nauseated by the foul-smelling stool.

Our Instruction in Dietetics Is Faulty

In many of our medical schools, when the subject of digestion is brought up in physiology, we are told that we should study foods, and the methods of their preparation. As a rule that is where the subject ends—the student is not taught how, is not told what chemical elements and what therapeutic properties there are in foods. This being so, it is not surprising that many enterprising people are making a specialty of foods for various diseases, and they are very prosperous.

Someone has said, "Show me a branch in which the specialist or 'institute' thrives and I will show you a branch which the general practitioner has neglected." If more attention were paid to these matters instead of looking so closely for "bugs" and microbes (which are possibly the "last straws" in making an ailment manifest in an already diseased body), we should do much to bring our patients to a speedy convalescence.

The theory has been advanced that germs are the result and not the cause of disease.

It is easy to see that this might be true. For, take a perfectly healthy body, with pure blood, which we know goes to every part of the human system with a speed faster than a horse can travel, hour after hour; should any germs appear in the system, they would be immediately devoured by the countless phagocytes, and no illness result. This would be especially true if the blood were not attending to the digestion of food. (This is why some physicians will attend all contagious cases only on an empty stomach. Their powers of resistance to disease are then first class.)

Supposing, however, that the blood was at work on a twelve-course banquet, and much of the food had gone along undigested soon to form a decayed mass (a Russian physician has discovered that the stomach and bowels are made to digest one or two kinds of food, never more than three—more kinds make waste), then such germs as appear will grow in the medium that is best suited to them, and these result in consumption, diphtheria or pneumonia, as the case may be, the germs most abundantly found determining the name of the disease. It has been found that diphtheria and tuberculosis are not limited absolutely to any particular spots of the body, though usually located in the throat and lungs, respectively.

Where the germ growth is, there is usually some pain. This is best allayed by properly applied hydrotherapy. When cold moist applications are used the growth and the resulting inflammation are inhibited. Purulent conjunctivitis (not specific) is readily and happily healed in this way.

Stop the Supply of Foods

With this etiology of disease in mind, the only logical thing to do is to stop the supply of food. The fever patient has no desire for it, and could not properly digest it if he did. When absolutely no food is taken, there is no occasion to worry, for there is nothing there to feed the fever. Let medicated water be taken internally, and applied externally by sponging with a mild common-salt solution. This blood-purifying medicated water for the inside should be soft and taken at a temperature a little above that of the body. The fever has then nothing but the impurities of the body to feed on, and these are chiefly eliminated by the kidneys, as will be seen by the increased flow of urine. The patient should take one-half cup of the freshly heated soft medicated water every half to one hour. Never feed to "keep the strength up."

My attention was forcibly directed to these ideas three years ago when I was collecting data on these lines. After days of reckless stuffing a patient was taken ill with vomiting, purging, and pneumonia; a rather infrequent combination. There was a great deal of pain in the bowels. I gave the usual remedies, but they were not successful. But the vomiting and nausea were at once allayed by little drinks of freshly heated blood purifier, and cold moist applications over the abdomen, frequently changed. It was a delight to me to see the pain go by the use of such simple methods. The patient absolutely refused any food for three weeks and I did not tempt her. The bowels moved every day for two weeks even though no food was taken.

There was no change made in the treatment for the pneumonia except that cold compresses (made of two thicknesses of coarse toweling and cooled by being laid on ice or wrung out of cold water) were kept all over the chest and covered with two thicknesses of the same material, dry. These were changed as soon as they became warm or as often as the pain returned. This patient made a complete and happy recovery, even though she had, as complications, glossitis and hemorrhoids.

My consultant remarked to me, and even told the patient's friends, that, had I given this patient the usual pneumonia treatment, death would have been the inevitable outcome. He further said to me that he wished he had known of this method of treatment in the early days of his practice. To the above treatment was added, of course, plenty of fresh air. Since then I have tried the plan on a number of other patients, with the same happy results.

Dietetic Abstention in Bowel Troubles

With reference to bowel troubles, the treatment is ideal, especially in appendicitis. Five patients, during the last six months, have been cured by it, with no relapses, except in a neurasthenic case, and no operations in any of them. The cold compresses and the little blood purifiers ease off the pain in a very short time without the additional use of any opiates. And here it may be well to state that *The Journal of the American Medical Association* recently reported that when an opiate, especially morphine, was exhibited, the power of the white blood-corpuscles was destroyed until the effects of the drug had worn off. What an opportunity is here given for the unfriendly germs

to get in their deadly work in the nutrient media that suit them best! I consider it unhygienic to give morphine.

When the acute attack of appendicitis had subsided, special instructions were given in regard to natural foods for the patient's individual use, time for and proper methods of eating. In other words, teach them to live a natural life so that their foods would do them good, and to quit "dieting." Some enthusiasts regard it a great thing to dispense with the breakfast, but this is not a safe "cure-all" to recommend indiscriminately. The food must be studied so as to give that food containing the proper elements or mineral salts that you wish your patient to have. For instance, the best kind of iron is found in tomatoes, having been transformed by the plant and deposited in the fruit ready to be assimilated.

This line of treatment will greatly shorten the duration of typhoid fever. It is a wonder that these patients fare as well as they do when the doctors and nurses are all the time trying to concoct something for them to eat, to "keep the strength up." Cold compresses all over the abdomen stop the pain and inhibit the growth of the bacillus. Then, too (the supply of food cut off), there is no nourishment for them to grow in. Under this treatment the case hardly lasts long enough for the diagnosis of typhoid to be made. The one great idea is to make the blood (the life stream) pure as rapidly as possible. This is the hygienic curative agent. I always aid this process with simple remedies (alkaloidal always preferred) suitable for the case in hand. Colic and indigestion just "melt away" under this treatment.

Constipation and Diarrhea

In constipation, diarrhea and dysentery I have found that no other treatment is as effective. I have in mind a patient whose bowels used to move but twice a month. She was taking drugs all the time and had been told that she never could be cured. Of course she felt somewhat blue and despondent. Now she has a movement almost every day. She is very happy and remarked not long ago that she never was so well as she is now. She is not taking any drug, but she is leading a natural, hygienic life. The bowels are regulated only by the food that she puts into her mouth. Appendicitis is often caused by constipation, but the bowels normally close when no food is taken, to open again when proper food is ingested in accordance with nature's law of adaptation.

We are all creatures of habit, and bad ones at that. We have depraved appetites. The things that we eat (in the amounts, and the lunches at odd times) are doing us no good, but we are just merely "starving" our tissues. White bread is one of the worst things that we eat. Instead of being the "staff of life," it might be called the rod of death. It is a great etiologic factor in constipation. It contains no cell-salts.

Fasting is hygienic, but it sounds the same as starving. We have a misconception of these two terms as applied to the healing art. Not anything is as good as "eating nothing" to rid the system of waste material. This therapeutic fact, applied, combined with proper medicine, will make the physician capable of "bucking" against any disease. To this must be added proper foods eaten in the right way. The results to the patient will be happy and lasting, and to the physician an enviably increased efficiency. Here is a great field for thought and investigation.

Physicians, as a rule, are loath to enter here and as a consequence are apt to give the patient no hope of cure. The patient's attention is called to the hygienic food specialist, who more often is a layman, and he is cured. It is high time for the profession to look out for its laurels and to use any method that will show the nature and prevention of disease and to aid in the curative welfare of the people.

Points and Summary

1. There is a movement on to educate the public in hygienic living and the prevention of disease. The educated, thoughtful, and intelligent layman will probably have less and less use for the physician.

2. Retention of poisons and toxins in our bodies is a prolific cause of disease. These come chiefly from the nonassimilation of the food we eat. The "common cold" is not caused by drafts or exposure. The blood is a rapid conductor.

3. To cure a "common cold," continence in food is the best remedy, combined with fresh air. Simple remedies are the best to purify the blood. Take food at the call of hunger. Hygienic living is a good cure for rheumatism and uric-acid troubles. All food and nearly all medicine enters the body through the avenue of the mouth.

4. No trouble arises if we assimilate all we eat. Food not assimilated becomes a rotting foreign body, much of which passes into the circulation, producing disease.

5. One should never have to realize the presence of a stomach. Our present methods of eating deaden this organ so that when it is empty there is a craving, gnawing, faint sensation often misinterpreted as hunger. With right eating the stomach is quickly sensitive to wrong eating and just as quickly resents it.

6. The "drinking" (instead of sipping) of milk is pernicious both for the sick and the well.

7. Hygienic treatment of disease consists in aiding the natural resources of the body to purify itself. This subject is only lightly touched upon in our medical schools, as well as that of foods. Foods, to a considerable extent, contain the elements necessary in the cure of diseases. Give no food in acute attacks, selected food for chronic cases. "Fasting" is the best method to rid the body of disease, acute or chronic, together with proper blood purifiers.

8. Cold inhibits the growth of germs, and stops inflammation when applied in conjunction with moisture.

9. In disease there is less danger when the patient is fasting. President Garfield and President McKinley were fed to their death, to "keep the strength up."

10. Simplest treatment often is the best. Hydrotherapy and fresh air in pneumonia. Morphine inhibits elimination. Appendicitis is curable without operation. The "no-breakfast cure" is not reliable. Bowels normally close when no food is taken. Food feeds diarrhea and dysentery.

Here is a great field for study and investigation by the general physician. The laity are studying these subjects, hence the physician must, or else lose business.

General Electrotherapeutics

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EDITORIAL NOTE.—This latest contribution to Dr. Bennett's series affords a concise summing up of a lot of practical facts, with which every physician doing electrotherapeutic work should be familiar. We urge its careful study; indeed, many of Dr. Bennett's epigrammatic sentences might well be memorized.

IT HAS been my aim all through the previous talks to answer the most important questions concerning the underlying principles or fundamental laws governing the science of electrification, in all the various modalities, or, in other words, to lay a solid foundation on which to base the system of therapeutic applications, which we will later take up in detail in the special electrotherapeutic talks. With the proper care in the preliminary preparation, we shall be able to go ahead intelligently and can show a "reason for our madness," while, by applying the known and fixed laws governing the science, we can be reasonably sure of getting satisfactory returns and a uniformity of results that will bring both success to us and relief to our patients.

Some of you no doubt wonder why we are so slow in getting to the practical therapeutics; however, the experience of years of teaching and practice, when we had no one to teach us except the slow, painful, expensive albeit valuable school of experience, has shown to us conclusively that it is far better to go ahead slowly and be sure, than to "rush in where angels fear to tread" and make mistakes and fail.

If you have thoroughly digested the previous talks, then we can leave you alone with the problem of therapeutics, feeling sure that you could "work out your own salvation," without fear and trembling. Inasmuch, however, as we all are human and liable to make mistakes and to forget, we have prepared a condensed outline of electrotherapeutics which takes up the exact details of the technic of all the known indications for electrification as a therapeutic agent. This is especially for the busy practician and intended to assist his "forgettory."

Science is the sum of demonstrated facts, and we have endeavored to place before you in simple language and in a clear and concise manner the series of electric facts which have been demonstrated.

Knowing these facts and the laws governing the production of the phenomena, the application of the latter is easy, and the practical manipulation follows a logical sequence.

Later, we intend to go more into detail in the treatment of some of the general constitutional and local diseases and to give special procedure insuring the best results in those conditions that most frequently will confront the beginner.

As these talks deal entirely with electrotherapeutics, we shall not enter into either the etiology of disease, the pathological conditions or the medical treatment.

We take it for granted that the physician who reads these talks has carefully studied the previous talks on electrotherapeutics as they have appeared in these columns from month to month, that he is competent to diagnose correctly any given disease to be treated and to recognize the pathological conditions, and is familiar with the medical treatment involved. It should be understood that no kind of electrical treatment contraindicates the use of proper internal or local medications or the use of such adjuvants as massage, baths, exercise, diet, or other physiologic measures. Indeed, it frequently is advisable to combine those measures with electrical treatment.

In outlining a definite line of treatment for each disease, it should not be necessary to explain in minute detail the method of supplying a certain line of treatment if the preceding talks, with the questions and answers, have been carefully studied and memorized. For example, if general faradization or central galvanization is the treatment recommended, we cannot specify for each individual disease where to hold the positive and where the negative pole or whether to use the primary or the secondary coil. In each case the physician knows whether a sedative or a stimulating effect is desired, while our former talks, or lessons, have told him how to secure either sedation or stimulation.

So, also, it should not be necessary to state for each disease where the galvanic battery is used whether the positive or the negative pole is to be used, for the difference in effect between the two poles and where each should be placed has already been amply set forth in the chapters devoted to questions and answers; and, if you are not fully informed or have forgotten, then it is advised that those numbers be consulted and well studied before actual treatment of a given person is attempted.

However, at the risk of repetition, in order to "make assurance doubly sure," we will once more state a few facts which, if remembered, will be a sufficient guide for the subsequent talks.

The following facts are important in every instance when undertaking treatment; not one of them should be forgotten.

Condensed Facts for the General Practician Who Uses Electrification

P. P. P. stands for positive pole for pain.

Electrolysis is chemical, galvanic only.

Phoresis is mechanical, galvanic, and static.

Catalysis is physiological, galvanic, faradic, static, high-frequency, sinusoidal.

Never use a bare metal electrode on the dry skin.

The faradic has a mechanical and a catalytic action.

The galvanic is the only mode having a chemical action.

Mild doses alone should be applied to sensitive parts.

The best method of irritation is by rapid change of polarity.

In cataphoresis, use iodine preparations under the negative pole.

In anaphoresis, use cocaine and alkaloids under the positive pole.

All modes and either pole have a great influence upon nutrition.

Do not make long exposures to the x-ray with tube close to patient.

Never leave a galvanic or faradic battery turned on, or short-circuited. The battery should be in a condition to run continuously during treatment.

The electrodes should always be in position before the mode is turned on.

Don't try experiments on patients. Try them first on yourself and see how it goes.

It must be remembered that for treatment a mild dose for a long time is more efficient and agreeable than a strong dose for a short period.

Frequent interruptions of the mode or changes of polarity intensify the effect of the mode and often are necessary to relax tense muscles, and so on.

The static mode is silent, continuous, in the same direction, without shock, generated by induction; has low amperage, high voltage, no chemical action.

The static induced mode is intermittently interrupted but is unidirectional, is induced, has low amperage, high voltage, no chemical action.

In voluntary muscles, contractions are produced immediately upon applying the mode and at the end of the treatment they return to their normal condition.

The primary coil gives more a mode of quantity and produces more violent muscular contractions, but lacks the penetrating power of the secondary-coil mode.

Galvanization of the sympathetic influences the vasomotor and trophic processes of the brain and spinal cord, of the face, eyes, muscles, skin, and many parts of the general body.

The galvanic mode will stimulate the absorbents more powerfully than the faradic, and it is the one to use in removing hypertrophies, morbid growths, effusion, and so on.

Do not let female patients take the static crown-breeze with hats on or with wire or celluloid pins or combs in their hair, since the wire is painful and the celluloid may explode and burn the hair.

Frequently it is advisable, in addition to treating the diseased part itself, to apply the treatment to adjacent parts, in order to influence the circulation and nutrition of the diseased parts.

If your battery or machine does not work, hunt for the trouble till you find it, and see whether it is not more your own fault than that of the apparatus. "If at first you don't succeed, try, try again."

The positive pole is acid, liberates oxygen, contracts blood-vessels, decreases nutrition, coagulates albumen, corrodes metals, causes dry, white, hard scar, relieves pain and irritation.

The negative pole is alkaline, liberates hydrogen, dilates blood-vessels, increases nutrition, does not coagulate albumen, causes no corrosion of metals, produces no scar but gives rise to a moist, red, soft condition and increases pain and irritation.

The galvanic mode is constant, flowing in the same direction; it is silent, gives no shock, is generated by chemical action, has high amperage, or strength, and low voltage, or pressure, inaugurates chemical action.

The faradic mode is alternating and interrupted, flowing in opposite directions, is noisy, gives shock, is generated by induction, has high voltage, or pressure, and low amperage, or strength, does not induce chemical action.

The electrothermal bath is a very excellent method of applying faradization and may be used in any case where this treatment is to be given. The vapor-bath itself is frequently a valuable auxiliary to the chemical treatment.

Good results cannot be secured with a poor battery or by improper methods of application. A faradic battery having a small coil of coarse wire produces a crude, harsh mode, which is lacking power of penetration and invariably will irritate a nervous patient.

In involuntary muscular fibers, as in the intestines, stomach, esophagus, contractions are immediately started upon closing the circuit; but the movement when once induced will continue for a considerable time after cessation of the treatment.

The best method of lessening irritability by means of faradization is, to begin with a very mild dose, gradually increase to the highest point short of producing pain, and after holding in position for a few moments gradually reduce the strength of the mode. (Swelling treatment.)

It is not as important in using the faradic mode that attention be paid to polarity; still, it is always advisable to use the positive for the active pole when a sedative effect is desired, and the negative for the active pole when a stimulating or irritating effect is desired.

Observations with a fluoroscope should be made only in a well-darkened room. The operator will soon find that the same apparatus which gives only faint outlines in broad daylight will show every detail at night or in a dark room after his eyes have become accustomed to the darkness.

The secondary coil produces a greater sedative effect and is a mode of greater tension and penetrating power, hence is more applicable to nervous and deeply seated diseases than the primary mode. The finer and longer the wire in the secondary coil, the greater the power of penetration and sedation.

In chronic cases it is necessary to vary the treatment occasionally. Where general faradization has accomplished all that it can, general galvanization may produce still further results. Central or general galvanization may fail in a case where general faradization would produce results and effect a cure.

The flowing of electrification from positive (higher) to negative (lower) is due to "difference of potential." (Potential in electrical parlance means level.) When the "potential is equalized" the battery is inoperative and then is said to have "run down." When deleterious action occurs within the cell it is said to "polarize."

Electrification sets in motion forces that continue to act for hours and even days after treatment, hence treatment should not be given too frequently. Nervous diseases in particular may be aggravated by too fre-

quent treatments. Ordinary chronic diseases require three or four treatments weekly. Acute and subacute forms of disease may require daily treatment. Nothing will be gained by treating patients more than once a day.

The resistance of the skin, which is very great, is diminished by enlarging the electrodes, which allows greater diffusion of the mode. If the dose be too strong and applied too long a time at a given place, there appears at the positive end an eschar due to acid reaction; but at the negative electrode ulceration results, from the alkaline reaction. The electrodes should be moistened with a solution of sodium chloride; this is a better vehicle than water, for the reason that the positive takes to chlorine and the negative takes the sodium corpuscles.

Scarcely a chronic disease is treated with electrification where we can not trace at least part of the good results following to the effects on the nutrition. In the treatment of almost any chronic disease, always remember that electrification properly applied will stimulate circulation, and that the increased flow of blood will bring an increased amount of nutrition; that the contraction of muscular tissues produces the same effect as massage or gentle exercise; that nutrition may be effected through a chemical process; that the process of waste and repair may be promoted; that the nutrition of the entire system may be improved through indirect action as well as by the direct effect of treatment, securing a constitutional, tonic, stimulantig effect.

The Science of Electrotherapeutics

It has been claimed by those whose interests are inimical to advanced therapeutics that electrotherapeutics is not a science.

Science—as we said in the opening—is the sum of demonstrated facts. But the facts which have been set forth in these talks are capable of demonstration, and therefore we make claim that electrotherapeutics is a science.

This science is yet in its swaddling clothes, but it is only a question of time when it will come forth, full-fledged and powerful, and constitute one of the mighty factors in our armamentarium and an efficient adjunct in treating diseases, a powerful aid in bringing about the restoration of the normal condition of health.

A preliminary knowledge of anatomy, physiology, physics, chemistry, and psychology will make the road of the student of scientific electrotherapeutics much easier to travel and help him over the rough places and through the shortcuts; but, as all are not equally fortunate in this respect, we have tried in these talks to make up for this for the benefit of those who are deficient in these things, and if these have been well mastered the study of the lessons will have been easy.

The careful student who has followed the teachings so far is just at the beginning of his work and at the threshold of the great storehouse of knowledge, from which he may take whatever he can apply and use to advantage in the broad field of therapeutics.

Theories are fine things; and, as theories go, any theory is all right as long as it applies and is capable of demonstration. But facts are stubborn things, and we are frequently confronted by conditions, not merely theories; and if things do not always go just as you wish do not jump at conclusions. Remember that electrification follows fixed laws, and, if there is a seeming contradiction or an apparent paradox, you should set your "thinker" in operation. There will be a reason somewhere.

If you leave a switch open and there is a broken circuit, hunt for the gap and fill it. Do not expect an insensate thing like a battery, machine or tube to go contrary to a natural law because a finite and very fallible operator has made a mistake.

Electrification is a docile and willing servant when properly handled, but is a stubborn and unyielding master when ordered to act contrary to its fixed rules.

Electrification in its divers manifestations is unexcelled in some things, but it is not as good as other things, in many instances, so do not claim that it is a cure-all. Sometimes it will do what nothing else can, and conversely; but it comes as near being a universal helper as anything we have at our command.

Judgment, discretion, caution, and discrimination must be exercised both in the selection of the case and the choice of the method of application.

Reason, care, and prudence will succeed, while hurry, carelessness, and guesswork will only bring trouble.

What is worth doing at all, is worth doing well. Be careful of details.

Nothing is too small or unimportant to be neglected or overlooked. Many dismal failures are recorded on the tablets of history, which were due to carelessness or ignorance.

You know the old story of how a nation was lost because of a single horseshoe nail.

(*To be continued.*)

WHAT OTHERS ARE DOING

BERIBERI AND RICE POLISHINGS

Some interesting investigations have been recently made in regard to the cure of beriberi by an extract from rice polishings. A kilo of this bran yielding rather less than ten grains of the extract, the latter, therefore, can not act as a nutrient. In the opinion of Dr. Schaumann, the curative principle involved is a nitrogenous substance analogous to trimethylamine. However, beriberi may also be cured by the consumption of yeast or of beans. The curative dose of the rice extract being minute, it must act, it is argued, as a ferment. It is found associated with the phosphorus of the grain in the pericarp. The ferment seems to be related to betaine, the principle found in plants where metabolism is most active. Altogether, it seems that trials might be made with nuclein here.

UROTROPIN IN EYE DISEASES

At the February meeting of the North Shore Branch of the Chicago Medical Society, Dr. Harry Gradle gave an interesting report on some experiments which he had made concerning the elimination of urotropin in the secretion of the eye. He concludes from the results of his investigations that the best effect can be expected from this drug in its prophylactic administration. It is hardly sufficiently curative to exert a marked disinfecting action, but inhibits and impedes germ growth. The doctor advises its use prophylactically in all injuries to the eyeball, the remedy being, of course, administered internally.

TETANUS ANTITOXIN

Dr. Wm. H. Park, of the research laboratories of the New York Board of Health, advocates the intravenous use of tetanus antitoxin in lieu of its subcutaneous administration, and urges that it not only be given in the case of all wounds of hands and feet, but also in every surgical case in which there is the slightest possibility of tetanus infection. Dr. Park believes in the administration of this remedy as a routine in the treatment of all wounds, especially during the summer season.

While not especially efficient as a curative agent, the agent is effective in preventing tetanus, and, if given early, when the premonitory symptoms are just appearing, many a patient who otherwise would die may be saved. Every physician doing any surgical work should keep a supply of this remedy on hand for emergency use. A few days' delay may mean the loss of the patient.

TREPONEMA IN GENERAL PARALYSIS

Noguchi has just discovered the treponema pallidum in the brains of twelve persons who had suffered from general paralysis. (See *Journal of Experimental Medicine*, February, 1913.) A clinical study of these cases indicates that these were cases of true paralytic dementia, and not of cerebrospinal syphilis. Ten were men and two were women, and seven of these cases were of the cerebral and five of the tabetic type.

Noguchi's researches seem to demonstrate conclusively a fact which has long been discussed but its verity questioned: that paralytic dementia (general paralysis of the insane) is of syphilitic origin. As *Biologica* says, "this discovery clears up in a singular way the pathogenesis of this disease, which up to this time has remained obscure."

HYPOPHYSEAL EXTRACT IN ECLAMPSIA

According to an abstract, in *The Medical Record*, from the *Berliner Klinische Wochenschrift*, Krakauer tested the oxytocic action of hypophysis extract in a case of eclampsia in a young multipara of excellent muscular development. She had never been ill and the convulsions appeared without any warning. When first seen she was unconscious. It was only learned that she was not known to be pregnant over seven months, and had a pendulous abdomen.

Taken to the hospital, the woman received narcotics and chloroform, the spasmophilic state being extreme, along with wet-packs.

There were no signs of labor, and no fetal heart sounds were audible. Attempts were made to induce labor by rupturing the membranes and passing a soft catheter into the uterus. Dilatation was extremely slow and after twelve hours there had been but few pains and the os would admit only the fingertip. Hypophyseal extract was now injected. The woman being still unconscious, the action of the pains was not very sensible, but in two hours the child was expelled dead.

When consciousness was regained, the woman, who had not expected her confinement for two or three months, could not realize what had happened. The child was mature, and it was impossible to fix the time of its death.

WHY DO WE TAKE COLD?

The *Medical Standard* quotes Sargent F. Snow (*New York State Journal of Medicine*) as finding the answer to this question in the word "autotoxemia." The accumulation of fecal poisons and the tendency to periodic toxic explosions lies behind the readiness with which some people take cold so easily. He says that the problem of prevention is practically solved if we can keep the liver and bowel functions close to the normal. Personally, Dr. Snow wakes up the liver with a mercurial once a week if the tongue or conjunctiva indicates torpidity of that organ. regardless of the claims the patient may make regarding regular bowel movements.

Every good doctor knows that one of the best remedies for a "cold" is a quickly acting purgative. An intestinal antiseptic, a remedy to raise body tone (quinine or strychnine arsenate, for instance), and a properly prepared autogenous vaccine should be "the" additional treatment for persons subject to repeated attacks of this too-common disease.

PREVENTION OF EPILEPSY

An interesting inquiry into the problem of the prevention of epilepsy leads Dr. L. Pierce Clark (*New York Medical Journal*, December 14, 1912), to conclude that the prevention of epilepsy is closely bound up with these questions:

(1) A more precise and intensive study of family-stock from which the disease is recruited. (2) Birth injuries and accidents must be still further eliminated. (3) The rearing of neuropathic individuals must be given more definite and painstaking attention. (4) Finally, proper metabolism in potentially epileptic individuals must be still more energetically safeguarded.

DIAGNOSIS OF KIDNEY LESIONS

Dr. G. W. Warren says (*New York Medical Journal*, December 14, 1912) that the albumin content in its relation to the amount of pus in the urine is the greatest gross aid in diagnosticating kidney infections and in differentiating them from cystitis.

The albumin content in the most marked cases of cystitis does not exceed 0.15 percent. Therefore, in pyuria of doubtful origin, where the urine *is free from blood*, an albumin content of more than 0.15 percent in the great majority of cases shows that the kidney is involved. With a small amount of pus and an albumin content of 0.15 percent, it can safely be assumed that there is kidney infection.

SOLANINE: THE ALKALOID OF THE POTATO

In the April 19 number of the London *Lancet* there appears an interesting editorial upon the poisonous alkaloid of the potato, solanine, which, it is claimed, is present in small quantity even in the normal tuber. The amount of solanine present seldom exceeds 0.01 percent, but it may easily be greatly augmented in certain diseased conditions of potatoes. So, also, sprouting potatoes contain an unusual quantity of the alkaloid, the larger proportion being found in the "jacket."

The editorial in question refers to the poisonous symptoms occurring in cattle that have been fed upon distillery waste consisting of potato-mash; however, the toxicological records do not show any serious indictment against this vegetable, and the author suggests that this is due to the small percentage in which solanine occurs.

Solanine, the writer states, may be efficacious in long-standing neuralgia, especially when neuritis is present, and for this purpose is better than either antipyrin or acetanilid. He says, "We have little doubt that oftentimes a judicious diet of potatoes would be of greater benefit to a good many self-physicking people than a dose of some antipyretic substance which they regard as adapted to relieve all headaches, whatever their origin."

Solanine undoubtedly is an excellent sedative, as the experience of those who have used it in the treatment of epilepsy, to replace the bromides, amply shows. The suggestion

that it may prove of value in neuralgia and neuritis is an excellent one, and we hope that the readers of CLINICAL MEDICINE will give this remedy a trial in these cases and report results.

TRAUMATIC HEMORRHAGE AND ATROPINE

A noted Chicago lawyer gave himself a bullet wound in the chest. A consultation of prominent physicians was held, but the man died, before their eyes, of internal hemorrhage.

In a neighboring city a prominent man inflicted on himself a pistol-bullet wound in the chest. A consultation of prominent doctors was held and all agreed that nothing could be done, that the wound was necessarily fatal. A young interne requested permission to make a trial. He gave the dying man rapidly repeated doses of atropine until his face reddened, stayed all night, keeping up the action—and the patient recovered.

Atropine was not employed in the first-mentioned case. Several hours elapsed after the wounding before the end came, time enough to show that the bullet did not sever a vessel of primary caliber. The physicians in charge undoubtedly knew nothing of this unique application of atropine. They knew of the active-principle movement only through the attacks of its enemies.

The youthful hospital-physician who won such a distinguished triumph over his elders had really been instructed in correct modern therapeutics.

HOW LONG DOES TYPHOID FEVER REMAIN INFECTIOUS?

The Medical Record abstracts a communication from Schumacher which appeared in the *Deutsche Medizinische Wochenschrift*, in which he discusses the problem indicated in the heading. The author does not refer to typhoid-carriers—who often remain infectious throughout life—but rather to that class of those individuals who give off the pathogenic bacilli for a longer or shorter period and then become bacteriologically sterile.

Of course, during the active period some measures must be taken to protect the public by suitable disinfection of these individuals, and so some arbitrarily fixed interval usually is adopted. The author has followed up several of these persons, presumptively sterile after the final official examination, and in some of them has seen the typhoid bacilli reappear in the urine and persist there for a number of weeks. He proposes keeping typhoid-fever convalescents segregated and controlled for at least six weeks after defervescence.

COMPRESSION OF THE ABDOMINAL AORTA IN POSTPARTUM HEMORRHAGE

Edward P. Davis (*Surgery, Gynecology, and Obstetrics*, December, 1912) tells of a patient who was exsanguinated from accidental separation of the placenta and suffered collapse, while being prepared for artificial delivery. After the cervix was dilated sufficiently to permit the introduction of the hand, the uterus was emptied of its contents. The hand was then brought into the uterus just above the pelvic brim, at the bifurcation of the aorta, and the latter was compressed by forcing the knuckles of the fist backward toward the spinal column. An assistant then opened a vein in the patient's arm and performed intravenous saline transfusion.

Strychnine, ergot, atropine, and digitalin were given by hypodermatic injection. A hot antiseptic intrauterine douche also was administered. As soon as the patient rallied, the uterus was tightly packed with 10-percent iodoform gauze. Although the patient was desperately ill, her uninterrupted recovery followed.

The author points out that this method is obviously an emergency method and useful only for the temporary arrest of hemorrhage, since severe pressure cannot be made for any length of time upon the uterine wall, nor can the operator's hand and arm endure the necessary exertion; but it has been found prompt and efficient to check bleeding rapidly and to afford opportunity for the exercise of methods calculated to secure permanent uterine contraction.

THE TREATMENT OF FURUNCULOSIS

In the discussion of a paper on the treatment of furunculosis (John L. Kelly, *New Orleans Medical and Surgical Journal*, December, 1912), it was pointed out that the inoculation of staphylococcus bacterins is followed by good results. These are sometimes prevented, however, by employing stock-bacterins which do not contain the proper strain of staphylococci, and for this reason the use of autobacterins is theoretically preferable. If, however, polyvalent stock-bacterins are employed, the results will usually be found very satisfactory. With a properly

made polyvalent stock bacterin, accompanied by the indicated medicinal treatment, brilliant cures are often effected. Readers of CLINICAL MEDICINE are requested to report.

BACTERIN-THERAPY THE HOPE OF THE FUTURE IN SEPSIS

In an interesting report on the progress of the year in obstetrics, Dr. G. L. Brodhead (*American Journal of Obstetrics*, January, 1913) says that he believes the subject of bacterin-therapy to be yet in its infancy; that in it there lies our hope in the successful treatment of sepsis is evident from the number of excellent reports from many observers.

In the author's experience, streptococcus bacteremia has proved almost invariably fatal, regardless of treatment; but, in the less severe conditions, there can be no doubt that vaccine-therapy will prove to be more and more valuable as time progresses and we learn from extended experience the indications for the use of vaccines and their dosage. There is, he declares, no more promising field of investigation than this.

We suggest that the best results in streptococcus infections may be expected by a judicious combination of antistreptococcus serum and streptococcus bacterin—the former for immediate action, the latter to stimulate the production of antibodies and bring out the immunizing resources of the body.

THE HYPODERMIC USE OF MAGNESIUM SULPHATE

In 17 cases of obstinate constipation occurring in patients afflicted with appendicitis, corrosive-sublimate poisoning, acute articular rheumatism, pneumonia, valvular disease, gastric cancer, and other disease, A. Robin and M. Sourdel (cf. *Merck's Archives*, December, 1912) made hypodermic injections of from 0.5 to 5 Cc. of a 25-percent solution of magnesium sulphate. The authors found that better results were obtained by making the injections under the skin of the abdomen rather than in the buttocks, as done at first. Good bowel movements were obtained in 14 cases. A dose of from 0.5 to 1 Cc. of the saline was found most effective, but increase beyond this point did not seem to bring quicker results.

CALCIUM SALTS IN ASTHMA

Dr. C. Kayser, in *Therapeutische Monatshefte*, and quoted in *The Journal of the Medical Society of New Jersey*, refers to the literature on the use of calcium salts as sedatives for the nervous system, and describes thirteen cases of asthma and allied conditions in which he found calcium chloride effectual as a prophylactic.

As a rule, Dr. Kayser ordered the remedy in the form of the following solution: calcium chloride, Gm. 20; simple syrup, 40 Gm.; water, enough to make Gm. 400. Of this, the patient took a tablespoonful in milk every two hours for eight days.

No untoward by-effects were observed in any instance, and the patients all said that after a day or so they could breathe and expectorate easier and their sleep no longer was disturbed. After the third day there were no further attacks, except in the case of two; and in some the relief has been permanent to date. One patient was afflicted with a complicating heart defect, but this did not interfere with the success of the treatment. In one of the two refractory cases, the negligence of the patient may have been responsible for the lack of benefit from the medication.

THE TREATMENT OF INTERTRIGO

Milian (*Paris Médical*, April 19, 1913) presents an interesting paper upon intertrigo, that common affection of the summer months, in which he asserts that it is a bacterial infection caused by a streptococcus which multiplies in the folds of the skin under the favoring influences of heat, moisture, and uncleanliness. According to the author, it not only is necessary, to get rid of the microorganism, but also to remove the conditions favorable to its reproduction in the affected region.

To accomplish the first object, he recommends the use of soap, in order to rid the region of the epidermic debris which furnishes a favorable medium for bacterial growth. However, cleaning the part with a pledget of cotton moistened with 90-percent alcohol or camphorated spirit is the best method. This may cause a little burning, but it has the advantage of at the same time cleaning up the part and destroying the germs by the coagulation of their protoplasm. This method of cleaning should be carried out three times a day, in the morning, at midday, and at night. Every third time, that is, once a day, the alcohol wash may be replaced by an application of diluted (2-percent) tincture of iodine. Ordinarily the pure tincture should not be used, since this irritates the skin; but in some rebellious cases it is occasionally

necessary to apply the full-strength preparation—but once only. In the intervals between the alcohol cleansings, the region is dusted with sterile talc powder, in order to separate the opposing surfaces. Powdered starch, which ferments readily, should not be employed.

In a few very rebellious cases, applications of silver nitrate may be made in connection with the iodine treatment just recommended, the silver preparation being renewed every fourth day. The silver nitrate is applied in a 5-percent solution to a region previously cleaned of all grease, in order to permit the silver solution to penetrate the skin. After this application a rod of pure zinc is applied, by which the silver nitrate is decomposed and precipitated upon the surface, which latter becomes as black as India ink. After this, talcum powder may be applied or a zinc paste.

Of course, intertrigo, or "chafing," may be prevented by keeping the body, and especially its folds, scrupulously clean.

EMETINE IN AMEBIC DYSENTERY AND HEPATIC ABSCESS

At the meeting of the Société Médicale des Hôpitaux of April 14, 1913 (see *Paris Médical*, April 12, 1913), Dopter presented some new facts concerning the surprising efficaciousness of emetine hydrochloride in cases of amebic dysentery and amebic abscess of the liver.

The patient, who had returned from Indo-China and entered the Val-de-Grâce hospital, was afflicted with an abscess of the liver, the first symptom of which appeared last October. Upon his entrance, his condition was so grave that immediate operation was necessary, the abscess being drained. The same day and for some days following 0.04 Gram (0.6 grain) of emetine hydrochloride was injected under the skin of the thigh. The discharge of hepatic pus was quickly reduced in quantity, and at the end of the week the dressing was hardly soiled, while at the same time the patient's general condition was greatly improved.

Cures of three cases of amebic dysentery of several months' standing were reported upon at the same time, one of them even being of two years' duration. Through the use of emetine, the colic, tenesmus, and the mucosanguinous character of the dejections rapidly disappeared and the stools recovered their normal state. A cure was effected within three days. Dopter says that it is truly remarkable to observe results as rapid as these and to see a disease jugulated which is generally so obstinate and rebellious to the most energetic treatment. He urges an extensive trial of emetine in the French colonies, especially in Indo-China and in Morocco.

At the same meeting Rouget reported two cases of amebic dysentery of several years' duration in which the patients, like those just reported, were cured in a few days by the use of emetine.

SUGAR AS A REMEDY IN HEART DISEASE

Several contributors to CLINICAL MEDICINE have suggested the use of sugar as an oxytocic. It may not be so well known that this common substance has value—or at least is said to have value—as a remedial agent in heart disease. Denyer (*The Lancet*, April 19, 1913) speaks highly of it as a remedy in these troubles, and says that, while it is of little value when there is edema or anginal pain, or when the cardiac disease is secondary to renal lesion, nevertheless, in a very large percentage of cardiac ailments it has decided merit, as the following clinical history shows.

"The patient, aged 77 years, had an irregularity of the pulse for some years. On November 8, 1912, she had a bad heart attack, with rapid, irregular, feeble pulse, cyanosis, and attacks of paroxysmal breathing, which occurred about 5 or 6 in the morning. There was no edema at this time, nor at any time during the illness. I saw the patient at 7 o'clock, and ordered inhalation of amyl nitrite, which gave temporary relief. This condition continued for some days, the patient steadily getting worse in spite of digitalis, digitalin, strychnine, drycupping, leeching, and frequent inhalations of oxygen. She said that the drycupping gave a sensation of great ease in breathing, and the oxygen certainly did her a lot of good, but the improvement was only temporary.

"On the 14th the patient seemed to be dying; when seen at 11 p. m. it seemed doubtful if she would live through the night. Her relatives thought even worse of her and were firmly convinced that she was going to die, and an experienced nurse whom I had in charge of the case thought there was little hope. I ordered some lumps of ordinary white sugar to be given in milk, and added some syrup to her medicine, telling them to give her four ounces of sugar during the night. In the morning I found the patient

very weak, but less cyanozed and with a stronger, slower pulse. Digitalis had been omitted as well as digitalin, as these had not any effect on the heart or pulse. Four ounces of sugar was ordered during the ensuing twelve hours, and after that it was continued in smaller quantities for some weeks.

"The patient made a slow by steady improvement, the breathing attacks getting less frequent and the pulse stronger and more regular. Her general weakness was very great and she gained strength only very slowly. By the end of February of this year she was able to go out into the garden for a few minutes, and to walk up and down stairs."

TOXIC DISEASES OF THE EYE

There is presented, in *The Birmingham Review* for July 15, an excellent résumé of the toxic diseases of the eye, by J. Jameson Evans, surgeon to the Birmingham and Midland Eye Hospital.

It is dufficult to explain these cases otherwise, unless due to chemic agencies. Even in tobacco amblyopia, the lesion may be due to nicotine, but also to intestinal toxins caused by tobacco interference with digestion. The special features suggesting toxicity are:

1. No pathogenic organism found in the lesion.
2. Reproducing the lesion by introducing the toxin, as with Calmette's tuberculotoxemia reaction.
3. The lesion differs in type from that induced by direct action of the same toxic organism, as in metastatic gonorrheal conjunctivitis.
4. Tendency to symmetric or bilateral distribution.
5. The activity varies with that of the focal lesion; tendency to variation, recurrence, and relapse.
6. Tendency to rapid and complete recovery when the supply of toxin is cut off.
7. Constant association of symptom-complex with definite focal lesion, dyscrasia or drug, with no evidence of direct infection.
8. Symptoms abate under specific serum or antitoxin.

No disease is absolutely toxic in type. The two main types are the inflammatory and the nervous.

The inflammations are relatively mild; with prominent lymphatic involvement, chronic if the toxin supply is continuous, and marvelously quick to subside when the toxin is cut off; variable, apt to relapses and recurrences.

The nervous lesions affect the motor or the sensory apparatus; central scotoma is important, and changes in the blind spot evidence disease of the optic nerve. The most important test is Bjerrum's. Priestley Smith, Bardsley, and Haitz and Haycraft made useful modifications.

The toxics affecting the eyes are thus classified:

1. Chemic agents: tobacco, iodoform, alcohol, quinine. These divide into two classes: (1) a retrobulbar axial neuritis, from tobacco, alcohol, iodoform, carbon disulphide, tea, coffee, antipyrin; (2) those with optic atrophy, from lead, quinine, methyl-alcohol, filix mas, atoxyl. Exudative choroiditis, retinitis, paralysis of accommodation, and pemphigus have been assigned to ptomaines. An intermediate class, containing the neuroretinites, and toxic amblyopias with central scotoma due to thyroid extract.
2. Perversions of body functions: enterogenous toxins, including the rheumatic, angioneurotic edema, acne rosacea, recurrent vitreous hemorrhages, retrobulbar neuritis with central amblyopia ascribed to hyperchlorhydria, or chlorosis, gout, gastrointestinal disturbances in children, chronic glaucoma, disease of ductless glands, as exophthalmic goiter and myxedema, xerosis.

Ocular disease may be due to sexual troubles, pregnancy or lactation. This albuminuric retinitis is largely due to nitrogen retention; amaurosis gravidarum, to chloride retention. Paresis of accommodation warns us of approaching eclampsia. Some maladies occurring about the menopause are toxic.

Leber's disease—hereditary optic atrophy—presents symptoms highly suggestive of toxemia. Diabetes affects the eye, as is well known; so does nephritis.

3. Toxins produced in infected areas include oral sepsis, nasal sinusitis, tuberculotoxemia, metastatic gonorrhea, diphtheria, and bacillus coli infection.

While not complete, this outline gives some idea of the important role played in ocular maladies by systemic infections.

HEREDITARY TUBERCULOSIS

According to *The Hospital* for November, 12 1910, as cited in *Merck's Archives*, Landouzy and Laederich, at a recent meeting of the Academie des Sciences, gave an account of their researches into the transmission of tubercle bacilli from the maternal organism to the fetus.

One hundred and forty-three little guinea-pigs born of tuberculized mothers were examined. Fifty-seven of these, killed either in utero or immediately after birth, showed no evidence of tuberculous lesions either macroscopically or microscopically, nor bacilli in the viscera. On the other hand, the viscera of four fetuses taken from the uterus of a tuberculized guinea-pig and inoculated into two healthy guinea-pigs rendered them tuberculous. Sixty-eight guinea-pigs born of tuberculous mothers were allowed to live a few months, when they were killed and of these sixteen showed definite tuberculous lesions localized exclusively in the lungs.

These facts would appear to support the theory of Baumgarten that children born of tuberculous mothers may be infected with a latent tuberculosis which develops only at adolescence or even later.

With regard to the transmission of a hereditary taint, the authors note a high mortality among the offspring of these tuberculous animals and the frequent occurrence of congenital malformations, amounting to 4.6 percent. Their observations would seem to confirm the view that the transplacental toxiinfection from a tuberculous mother tends to enfeeble the offspring and cause a degeneration of the race.

This question of the actual transmission *in utero* of the tuberculous virus has been extensively investigated ever since Koch's original researches, and in Germany Baumgarten, aside from his pupils, is practically the only one who still insists upon the hereditary transmission of tuberculosis in the form of its germ. It has been shown, especially by the classical experiments of Gaertner, that the tubercle bacilli can not pass through the placenta unless this is pathologicaly altered, and the few cases on record in which fetuses or infants were found actually tuberculous at birth prove the exception rather than the rule.

Another question is that of the opinion first advanced by Courmont, to the effect that, in the case of tuberculous mothers, tuberculous toxins are transmitted from the placental to the fetal circulation and that these render the infant hypersensitive to a later tuberculous infection.

The investigations on this subject have been carefully reviewed and discussed by Achard in a paper read before the Chicago Medical Society in May, 1910, and were published in *The Illinois Medical Journal* for September, 1910, to which we refer our readers for more detailed particulars.

The insistence of Landouzy upon an actual transmission of tubercle bacilli as an all-too-frequent occurrence is, it seems, mistaken and not in keeping with ascertained facts.

More conservative and in agreement with known facts are the results of the investigations of Prof. S. Arloing, Lyon, France, which we take from *Tuberculosis* through *The Lancet-Clinic* for January 14. This investigator's conclusions are as follows:

1. Consumptives seldom communicate tuberculosis to their descendants through their conceptional life.

2. On the contrary, they often transmit to them a certain functional debility which renders them accessible to the various causes of lethality or which retards more or less their development.

3. The influence of the ascendancy on the products is manifesting itself particularly when the tuberculosis is raging in the mother or simultaneously in the mother and father.

4. It is difficult experimentally to prove a real native or hereditary predisposition to tuberculosis.

5. However, the descendants of consumptives are more sensitive than other subjects to certain effects of tuberculization, and are showing more frequently than children born of normal parents a notable proportion of agglutinine in the blood-serum.

6. The question relative to the predisposition to tuberculosis requires new researches before it can be solved.

THE WHY OF TOBACCO

The most remarkable thing about tobacco has been, not so much the all but universal craving of mankind for the weed, as the absolute inability of anybody to proffer even a plausible reason for this preference. When tobacco was first introduced to the Hottentots of Cape Colony, they desired the sickening stuff so badly that they traded for it their herds, although the certainty of coming starvation in consequence should have prevented such squandering.

Now we have at last a reasonable, and even scientific, explanation, in that tobacco smoke has been determined to be in high degree germicidal. This vindicates the Hottentot. Still, it leaves the further query: How did he know it? And how knew he that cholera was on its way himward, that this malady was due to the comma bacillus, and that the pyridin in tobacco smoke was death to the crooked little pest?

MISCELLANEOUS ARTICLES

Is Antityphoid Vaccination Dangerous?

THE editorials have recently appeared in *The New York Medical Journal*, the first being an abstract of an article written by Louis and Combe, two assistants of Prof. Vincent in his laboratory for antityphoid vaccination at Val-de-Grâce, in Paris (*Monde Médical*, December 5, 1912). In this article the value of antityphoid vaccination as a prophylactic of typhoid fever in the French army is amply shown, and, as the editor of our New York contemporary correctly says, "these excellent results indicate that a higher percentage receive some immunity than by the English vaccine."

However, the editorial writer in question lays particular stress upon the long list of contraindications enumerated by Vincent and his assistants. Among these, he mentions pharyngitis, influenza, coryza, bronchial and pulmonary affections, acute gonorrhea, syphilis, cachectic states, Bright's disease, diabetes, and various other more or less serious diseases.

Malaria, he asserts, may be lighted up by prophylactic vaccination, and in tuberculosis there is said to be a severe reaction similar to that following the injection of tuberculin. The editor also quotes Spooner, of Boston, who declares that the vaccine may cause the lighting up of any latent disease, and the inference conveyed is that a latent tuberculosis may be converted into an active tuberculosis by the use of this prophylactic measure.

In the second editorial, one case-report, taken from the Army records, is cited, that of a man who developed an active tuberculosis following prophylactic treatment against typhoid fever.

This is, apparently, a somewhat serious indictment, but before taking it too seriously we should read the other side first. In the United States Army, typhoid vaccination has been tried upon a larger scale than anywhere else in the world. The results have been so brilliant, and the drawbacks so slight, that thus far they have not been serious enough to merit any considerable amount of discussion. This is very clearly shown in an article by Lieutenant Colonel Kean, of the Medical Corps of the United States Army, replying to the editorial attacks of *The New York Medical Journal*. This article is of such interest that we reproduce it from the *Journal* in its entirety.

SNAKES IN IRELAND

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL.
WASHINGTON, *April 10, 1913.*

To the Editor: The casual reader of the editorial article in your issue for April 5, 1913, entitled "The Dangers of Antityphoid Vaccines," especially if he did not have an opportunity to read in full the articles upon which the editorial comment is based by Professor Vincent's assistants, Doctor Louis and Doctor Combe, in *Monde Médical* for December 5, 1912, and Doctor Spooner, in *The Journal of the American Medical Association* for October 12, 1912, might readily infer that this procedure has dangers which are considerable and not negligible. It is believed, however, that this inference is a mistaken one which is not justified by a careful reading of the articles in question and by a study of the vast experience, on record in the office of the Surgeon-General of the Army, covering more than 100,000 immunizations.

It is true that Louis and Combe detailed with considerable fulness the conditions which they consider to contraindicate the employment of the vaccine. Spooner also recounts incidences of temporary exacerbations in cases where the immunization was employed in persons suffering from various diseases. The conclusions of these authors, however, differ in no respect from those of Russell as expressed in *Circular No. 7*, Surgeon-General's Office, April 24, 1912:

"*No person should be immunized who is not perfectly healthy and free from fever at the time.* In case of doubt, it is advisable to take the temperature and to examine the urine. If the man has fever or any other signs of illness, the prophylaxis should be postponed until he recovers. This precaution is necessary, to avoid its administration to men who may be coming down with typhoid or other fevers. The men should be cautioned not to drink beer or alcohol in any form on the day of treatment. This prophylaxis is borne well by children and by women, using doses proportionate to the body-weight, taking 150 pounds as the unit. Women should not be given the first dose during or near the time of the menstrual period."

These suggestions are simply the suggestions of common sense and experience and do not imply that the procedure applied with any reasonable amount

of precaution is dangerous in any accepted meaning of the word. None of the writers quoted have stated any case in which a permanent injury has been caused by this procedure and their conclusions are far from being in any way adverse to it.

Louis and Combe conclude their article as follows: "*We are thus undoubtedly in possession of a method which, it is not claiming too much to say, is for typhoid fever as efficacious as is the vaccination of Jenner for smallpox.* The results which it has given in Morocco have surpassed all hopes and convinced the most skeptical."

"Antityphoid vaccination," recently wrote the chief medical officer of the Hôpital Louis at Meknès, "is followed here in an intensive fashion. There remains in all the garrison only about 200 unvaccinated Europeans. The results are surprising. The typhoid wards, formerly so crowded, are today almost empty. With more than 4000 troops, there are actually only two typhoid cases under treatment. It is wonderful."

The conclusions of Spooner, in the article referred to, are as follows:

"Frequent injections of small amounts of a low-virulence vaccine cause slight inconvenience.

"They seem to produce a protection among nurses, who are eight times more liable to the disease than the average individual.

"Their morbidity, under ordinary conditions, is 1.4 percent or nineteen cases among 1361. Only two cases developed under these conditions.

"Case-morbidity among the uninoculated in these hospitals is nearly nine times greater than among the inoculated subjected to similar conditions.

"No permanent untoward effects have arisen from over 5000 injections.

"The blood-picture indicates a certain protection lasting at least two and a half years.

"The use of this means of protection has been shown to be safe in two epidemics, and very efficient in at least one of them."

In the great recent experience of the United States Army, where typhoid immunization is compulsory, although temporary inconveniences and accidents have occurred which should properly be classed as disagreeable but not dangerous, there seems, after a reasonable discrimination is exercised between *post hoc* and *propter hoc*, no grounds for belief that this procedure is any more dangerous than vaccination against smallpox. It does not appear to have increased the morbidity from any other cause. Even as regards tuberculosis, it does not appear to have stimulated into activity latent processes in any appreciable number of cases. The average rate per mille of admissions for tuberculosis during the three years of 1910, 1911, and 1912, during which there have been more than 100,000 immunizations, has been 3.56, as compared with an average rate of 4.43 admissions per mille for the three years antecedent to 1910.

On the other hand, there is a real danger in an attitude of unjustifiable pessimism and excessive precaution. The only officer of the United States Army who died of typhoid fever in 1912 would in all human probability have escaped being cut off in the prime of life if the typhoid immunization had not been withheld on account of the recent arrest of a pulmonary tuberculosis in his case.

Is not the conservatism rather extreme which would seriously weigh the slight inconveniences of typhoid immunization against its remarkable benefits, and which solemnly declares that the question of its adoption is still *sub judice*, when typhoid fever is so near extinction in the Army that the Surgeon-General has not received the report of a single case in the Army during the current calendar-year, the date of the last case reported being December 9, 1912?

J. R. KEAN,
Lt.-Colonel, Medical Corps, U. S. Army.

We agree fully with Colonel Kean, that there is "danger in an attitude of unjustifiable pessimism and excessive precaution." In this country, at least, there is little evidence to justify the long list of contraindications enumerated by Louis and Combe, and the single case of latent tuberculosis awakened into activity cited by the *Journal* is too palpably exceptional to excite alarm.

Prophylactic typhoid vaccination in our army has proven safe as well as efficacious and we can reasonably hope for similar brilliant results in civil practice. We urge American physicians to use it, and to use it widely.

PELLAGRA TREATED WITH SODIUM CACODYLATE, THE SULPHOCARBOLATES, AND CALCIUM SULPHIDE

I do not like to appear in print too frequently, but I have had a little experience that I just cannot forego relating to the readers of CLINICAL MEDICINE. I have so often been helped by reading the many short practical articles by its contributors that I am constrained to give this experience, so, that it may be of some service to someone else, perhaps.

We all have learned enough about pellagra to make us dread it above every other disease. I cannot say positively that I have found a cure for pellagra; in fact, I do not believe that any physician, American or foreign, has as yet found a specific for this disease.

I have attempted to read everything I could find on the subject, and I have discovered a very wide range of opinions on the best methods of treatment. I myself am of the opinion, very strongly, that, when we see a case of pellagra showing the symmetrical eruption on the hands, feet or neck we then have a well-organized and deep-seated disease of the nervous system to deal with at once, and that, if we expect to do anything for the patient, we have more to do than simply to treat the eruption as we find it on the integument. I believe that, if we are correct in making a diagnosis, we should begin the heroic treatment at once. All the hand-lotions or applications for the cure of the eruption without the systemic and intesti-

nal-mucosa treatment is time lost to the patient.

Early in March a married woman about 21 years of age presented herself with a very pronounced rash on both sides of the neck and on both of her hands. She told me of having had a similar rash two years ago which did not give her much trouble, but followed the second year by a more marked and pronounced outbreak. The second attack was treated by another physician, who pronounced the trouble simple sunburn. This year, the third outbreak, the symptoms were decidedly more marked.

The woman was very nervous, more so than she had ever been before. Her bowels were badly deranged, the dejections being offensive and of thin, watery consistency. The eruption involved all the exposed portion of the forearm and neck and was identical on both hands and on each side of the neck. The tongue was blood-red in color, the gums were red and sore, the tonsils painful and swollen. Temperature was normal; pulse, 100; no discernable irregularity in the heart's action. Since the return of these symptoms this year she had been unable to sleep at night, her appetite was poor, and she was in a general rundown state.

The patient appearing very nervous at the time of her first visit, I did not give her my diagnosis, for fear of augmenting her already nervous trouble, but next day saw her husband and told him that I considered it pellagra. I informed him that I could not do much for his wife except by a course of hypodermic treatment, and this was assented to.

I began treatment by giving an injection of cacodylate of sodium, giving 2 grains on March 6, I also directed the patient take one tablet every three or four hours of the combined sulphocarbolates as an intestinal antiseptic, and calcium sulphide, in 1-grain doses, three times daily. When I saw the patient twenty-four hours after the first injection I found her doing fairly well, no unusual symptoms having appeared.

On the third day I gave a second dose of 2 1-2 grains of cacodylate of sodium hypodermatically, and—it does seem almost unreasonable to say it, but such was the fact—the eruption, from the fourth day, began to fade away very rapidly; the tongue assumed a more normal aspect; the patient was not so nervous; she could sleep much better; and the bowels began to improve markedly, the movements now being reduced to about three or four a day.

The fourth injection was given on the sixth day after the third injection. The patient now, however, began to complain much of confusion of eyesight; but at this I was not surprised, for I had seen this symptom before. The fifth, sixth and seventh doses of the cacodylate were given further apart each time, the seventh being administered on the fourteenth day after the sixth.

The intestinal antiseptic and the calcium sulphide have been given almost continuously since the beginning of the treatment.

At present the patient is improved so much that she is considered cured by her friends. But this is exactly the point that I desire to bring out—I want to know whether this woman is actually cured. I do not know whether she is likely to have a return of her trouble. Will not some members of the "family" kindly give us their opinion? I report this case that we all may be helped by the discussions in the journal.

JOSEPH W. GREGORY.

Cisco, Tex.

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[We want a good live discussion of this paper and that of Dr. Pixley, which follows. Let us hear from our southern brethren.—ED.]

PELLAGRA CURED BY DIETETIC TREATMENT

Three years ago, at the Pellagra Conference held in Columbia, South Carolina, I offered a paper embodying my views concerning the role of rancid fats in the diet as a cause of pellagra; but only a limited time was granted me, and it was only through the kindness of Dr. C. C. Bass of New Orleans, that I was permitted to present my views with reasonable fulness. (See CLINICAL MEDICINE, August, 1911, p. 884.)

Quite naturally, the question has been put to me why the ingestion of fats should engender this disease, and, so, I have formulated my explanation in a letter recently addressed to Doctor Bass. The substance of that communication is embodied in the abstract I am presenting herewith.

At the beginning I am emboldened to say to the readers of CLINICAL MEDICINE what I wanted to make plain at the Conference; towit: *There is no drug cure for pellagra; but it is the most easily cured disease of which I know.*

Furthermore, the prevention of pellagra is easy and this dreaded malady can be swept off the face of the earth simply by teaching people the right things to eat.

I will premise my remarks by saying that my conclusions are based upon a study of eleven hundred cases. Five out of the total of these 1100 victims are dead; but, so far as I know, the others are all living and feeling well—and 7 of them had typhoid pellagra.

And now to our subject. If you are running an automobile, you have learned that, to insure the motor working well, one must use a proper mixture of gasolin vapor and air. If too much air enters, the motor is weak; if there is too much gasolin, the motor becomes full of soot, that is, carbon.

Just so, if the human motor is to run at its best, it must be fed a proper mixture of protein, carbohydrates, and fat. Until the Studies of Starling and Bayliss were given to the world, in about 1896, our knowledge as to how these classes of foods acted was imperfect. Up to that time it was thought that the body could work indefinitely upon either one or two kinds, or all three, in any relative proportion, provided hunger was satisfied.

To me, the error lay in placing protein under the head of foods. While this substance may serve to sustain life (by being oxidized), its primary office, after it is digested by the pepsin and hydrochloric acid of the stomach, is to stimulate the formation of secretin when coming in contact with the prosecretin of the duodenum; the secretin, thus formed, being taken to the liver and pancreas, then stimulating the latter glands to action. Following a proper meal, in the case of a person of about 150 pounds and doing much labor, a pint each of bile and of pancreatic fluid is discharged into the duodenum through the "common duct." The amount of protein needed to produce this modicum of bile and pancreatic fluid is about one ounce at each regular meal.

What occurs if one gets less protein than is indicated? Here I must call your attention to the problem of atrophy and hypertrophy. The fish of Mammoth Cave have no eyes. After working in a twenty-feet-square office for fifteen years, I had lost my far-point of vision, but this power was restored again after widening my horizon. The blacksmith's arm held in a sling loses its fulness and strength, but both are regained by proper use before fatty degeneration takes place. To keep any function of the body up to 100 percent, that function must be performed steadily up to 100 percent.

So, then, if the liver is not kept up to full capacity by the stimulation from a requisite amount of protein, taken at proper times, it becomes atrophied to the point of suiting its regular, reduced, work. One may as well expect a bookkeeper, with his atrophied muscles, to do the day's work of a wood-chopper, as to expect the liver or pancreas habituated to a given task suddenly to increase its functioning when called upon by an unusually rich meal. Or, how can an eye accustomed to see not farther than twenty feet be hoped suddenly to "shoot" accurately at a target five hundred feet distant, or more.

If the body must have the services of a pint of bile three times daily, for the digestive process, to meet the requirements of our present mode of life, what would be the result if only half, or less, that amount were excreted as the rule? Plainly, the results would be of a twofold nature: (1) with respect to the body, and (2) involving the liver and pancreas.

First, as to the body. The body requires, to enable it to do its best work, the laxative effects of the bile in normal quantities. A deficiency forces the employment of cathartics and cholagogs—repeated without end. It makes for imperfect emulsification of fatty foods and, with a deficiency of pancreatic juice, interferes with their digestion and that of the carbohydrates, as well as with the glycogenic function of the liver. Then, also, think of the retention in the body of waste matter that should escape in the bile secreted in normal proportions but is retained because of diminished function, with the autotoxemic symptoms of many kinds as a result.

In pellagrous patients, deficiency in protein consumption usually is associated with a marked increase in fats in the diet; and the fats of necessity *must* turn rancid in the digestive tract, fatty acids being abundantly present. In this doubly acting wrong, the constitution of the blood is impaired and every part of the body lacks proper nourishment.

Among these systemic impairments, that of the nervous system, from the diminishment of the hemoglobin, stands forth prominently. The alkaline reaction replaces it. The intestinal antiseptic influence of bile is gone, and germ growth flourishes. This recital does not by any means complete the list of woes, but it will do for our purposes.

Second, as to the liver. And, what is said here is equally applicable to the pancreas, functionally and physically. Here now comes in some of my imagination, some of my speculations.

The salivary glands work in response to any kind of stimulation—any kind of food or savory substance or vapor in the mouth, or the sight or the thought of such, normally

stimulates them. And, so far as I know, they are the only glands that are thus affected. [According to Pawlow, the gastric secretion is influenced by psychic stimuli in a similar way.—ED.]

In the stomach, the digestive agents are responsive only to protein. Fats and carbohydrates provoke no response of the pepsin and hydrochloric-acid secreting apparatus.

The difference in chemical reaction between the stomach and the duodenum causes a relaxation of the pylorus, with a resulting moving of acid stomach contents into the gut. The commixture with the prosecretin here encountered generates secretin, and the secretin, carried to the liver and pancreas, provokes bile and pancreatic fluid. No protein, no action of liver and pancreas. Little protein, little action of those large glands.

Those persons who have been my pellagra patients were accustomed to eat, many of them, five ounces of cornbread and three or four ounces of hog-grease three times a day, this representing about 70 calories in protein, 600 calories in carbohydrates, and 2400 calories in fat (estimated), and the otherwise usual rapid action of bile and pancreatic fluid upon an ordinary meal must be weak and prolonged in the case of rations like these. But the influence of 70 calories in protein, in the inciting of glandular action, would count for much less than that of 800, this giving time for decomposition, germ growth, and toxemia.

It is under precisely such conditions that inflammation of the stomach, or the cecum and appendix, or descending colon, or rectum, or parts of all of the peritoneum appears in severe or mild forms.

I wish to tell you that many times I have thought that appendicitis is the most frequent form of development in this condition of diminished liver and pancreatic action due to deficiency of protein in the diet; but of course, I cannot prove it. Remember, I am surrounded by very pronounced and numerous examples of this error in diet.

I will here record my definition of pellagra, as follows:

1. Pellagra is one of the various shades of deviation from normal digestion—a disturbed action of the digestive organs, due to errors in diet—this tending to local lesions in various parts of the body, caused by systemic empoisonment from intestinal infection.

2. The changes in the liver, functionally, owing to deficient protein in the diet, have been mentioned. The change in it, physically is one of atrophy. While protein, fat, and carbohydrates usually are combined by nature in the vegetable foods, the first of the three is in deficient quantities and requires to be supplied by ourselves. If this is not done, the liver and pancreas become habituated to responding daily to one-tenth or less of the stimulation required to keep all the cells composing these glands up to the normal capacity. When an unusual stimulation comes to them, they are unable to respond.

You see, we are getting down to other diseases, besides pellagra, now. We are getting down to why germs are so numerous and destructive, and are found everywhere. I opine that many of them are not the *fons et origo mali*.

When one considers what happens when the protein is supplied daily in amounts of 1200 or more calories for long periods of time, one thinks of kidney, heart, and artery diseases, instead of pellagra and like derangements.

My course with all pellagra patients is to try to reestablish hepatic and pancreatic functions by means of protein in such amounts as these inefficiently acting organs will bear increasing the amount weekly. This, of course, in addition to the use of such drugs as seem indicated.

The rapidity with which the patients recover is gratifying, unless the error has been so long-standing that a degeneration—fatty, fibrous or cancerous—has resulted. That is a different story.

To those of my readers who have followed me I will say that my aim has been to show you some of the thoughts in my mind regarding pellagra, and why, in my opinion, fifteen advanced pellagra patients sent north as material for study, and who were expected to die, surprised everybody by getting well!

C. S. PIXLEY.

Winnsboro, N. C.

A CORRECTION

Our London correspondent writes us as follows: "I wish to correct an error (I was about to say a printer's error, but I forbear, lest I expose myself to sarcastic editorial remarks as to the illegibility of my handwriting in comparison with typewriting) that has crept into my letter as printed in the April issue. I refer to the article on 'Splenic Extract and Tuberculosis,' that appeared in *The Lancet*, and the author's name of which was erroneously printed as Hanover. It should have read Dr. Henry R. Harrower." We present the desired correction.

Of course our readers will know at once that the person referred to is Dr. Henry R. Harrower, formerly of Chicago, and then the editor and publisher of *Physiological Medicine* and of *Successful Medicine*. Dr. Harrower is now busily engaged in professional work in London.

AMERICAN MEDICAL EDITORS' ASSOCIATION

The American Medical Editors' Association will hold its annual meeting at the Hotel Radisson, Minneapolis, June 16. There is promise of an interesting program and, as usual with this Association, a splendid time. The annual banquet will be held in the same hotel upon the succeeding evening.

Let us hope that every physician who is connected in an editorial way with the medical press will become a member and attend this Association's meetings, if possible.

HEMOGLOBINURIA: ITS SYMPTOMATOLOGY AND TREATMENT

The condition, properly called hemoglobinuria, is known, among the profession and the laity, by a variety of synonyms, as, for instance, malarial hematuria, hemorrhagic malaria, swamp-fever, blackwater-fever, black-jaundice, yellow-chills.

Of this type of malarial disease, only a very few cases have been reported previous to the Civil War; and it is quite possible that the mosquito that carries the plasmodium malariæ was not originally found in this country but was introduced with slaves from Africa, where the disease has been a scourge of the low lands of the Dark Continent for ages. If the cause had existed during the early settling of this country, surely some reports would have been left by the physicians of those times. At present the disease under consideration is prevalent in Mexico, Central America, South America, and in all of our southern states.

This type of malaria is observed only in persons who are suffering from chronic malaria. There must be certain lesions of structure before there can be an attack of hemoglobinuria, and, hence, this condition may be regarded as a sequel to chronic malaria. It is seen more often in the young and middle-aged; not often in the old, and never in the nursing child. Negroes are very nearly exempt, but sometimes quadroons are affected. One attack predisposes to others; in fact, there must be a predisposition to the disease in order to contract it. This predisposition may be hereditary or it may be acquired. Many families are so predisposed; just why this is true, I do not know, but it is a fact.

The symptoms of hemoglobinuria are such as not to be easily interpreted. The person who has been suffering from chronic malaria is suddenly attacked with a severe chill, and on first passing urine, this appears black and bloody. It is thick with broken-down red blood-cells, usually passed in large quantities.

At first the eyes become a deep-yellow, then soon the whole body; this jaundice coming on with great rapidity, the body becoming deeply jaundiced in a few hours. Rigors are very severe and frequent; there is great restlessness, tossing from side to side, but no special pain; the patient vomits every few moments, the vomited matter being tinged with bile, sometimes with blood, and if it has lain long in the stomach it is black and resembles the black vomit of yellow-fever.

Sweating often is very profuse. The temperature never is high, ranging usually from 102° to 104° F.; the pulse is soft and compressible, becoming rapid and weak. The bowels are constipated; the breath offensive and the tongue covered with a thick yellowish coat.

If the urine does not clear up in twenty-four hours, there usually is suppression, and this generally is the beginning of the fatal ending; for I never have known the kidneys to resume their function where the suppression was complete. On the other hand, I have never witnessed a fatal ending if the kidneys continued to secrete the normal amount of urine. When the urine clears and is plentiful the prognosis always is good.

Now as to the treatment. It is evident that the successful management of hemoglobinuria consists largely in elimination, and for this purpose purgatives in large and repeated doses clearly are indicated. Calomel is the remedy *par excellence*, to be followed by saline hydrogogs. "Dilute the blood and wash out the kidneys" should be the slogan. Give the patient plenty of water and demulcent drinks. Effervescent citrate of magnesia solution is a nice and efficient remedy, also, effervescent magnesium sulphate.

Prescribe the cold infusion of digitalis, to support the heart and flush out the kidneys. Do not make the mistake of giving any remedy that will irritate the kidneys. Always remember that there already are great pathological changes in the liver, the spleen and the

kidneys. The spleen is much enlarged and has been overworked. The uriniferous tubes and loops of Henley are denuded of their epithelial lining, and any remedy that will irritate them will surely stop their function.

The inhalation of a little chloroform to prevent rigors will do good. Mustard plasters to the stomach to control vomiting are always beneficial. Sparteine sulphate, in 2-grain doses given with the needle every two hours, is a remedy of great value and should be given early and late; for by slowing the heart beats and increasing the urine without irritating the kidneys, it meets the indication in every way. Astringent remedies, such as tannin, are mentioned only to be condemned.

Experience has taught that quinine in this disease has no value, but rather seems to produce renal suppression; for quinine being eliminated by the kidneys, it probably is harmful. But in what may be termed "pseudo" cases, the drug is certainly indicated.

By "pseudo" cases I mean those frequent hemorrhagic forms in which every intermittent paroxysm produces some little hemorrhage from the kidneys. Here the examination of the urine under the microscope will show blood-corpuscles in their entirety, and not the corpuscle debris that is seen in true hemoglobinuria. Physicians sometimes acquire cheap reputations by curing of "black-water-fever" when it is of this pseudo kind. These patients usually get well promptly under quinine, or any other treatment, for that matter.

We must remember that in hemoglobinuria we are not trying to destroy malarial parasites, for they already are dead; rather we must endeavor to assist nature to eliminate poisons of various kind from the blood. Should complete suppression of urine come on, this work must be done by other organs. Try Pilocarpine by needle, hot baths, continuous irrigation of the bladder with hot water; strychnine to support the heart and respiration. Normal salt solution injection is one of the truly great remedial measures. Other remedies may suggest themselves, always bearing in mind the pathology.

The temperature of itself never becomes an element of danger. In fact, in some cases there may be no rise of temperature after the first day and, yet, the patient may die of uremia.

Persons who have once been attacked by the disease are very prone throughout life to further attacks. The second or third usually proves fatal; so, all persons after suffering an attack should be warned to remove to some locality where the disease is unknown. No special treatment in the convalescence period is called for.

WEDEN T. SMITH.

Jeffris, La.

APRIL COPIES WANTED

If any reader of CLINICAL MEDICINE can spare us his copy of the April, 1913, number, we shall be glad to advance his subscription one month to pay therefor. We are sorry to say that our supply of this issue is entirely exhausted. Send in your copy and notify us by letter or postcard that you have done so; that will be sufficient to insure proper credit being given—in addition to personal thanks in advance.

"GETTING" THE DISPENSING DOCTOR

An Ohio reader of CLINICAL MEDICINE sends us the clipping from *The Cincinnati Inquirer*, May 4, 1913, which we print below. He wants to hear our opinion in this matter and whether he will be compelled to quit dispensing or not. Here is the item referred to:

It's when the hunter becomes the hunted that interest in the chase becomes the most absorbing. During the past session the organized medical profession of Ohio, equipped with a legislative committee, a red-headed press-agent and other suitable paraphernalia, entered upon a brilliant campaign to have their code of ethics enacted into law. Their lawful prey are the doctor who advertises, the nature-healer, and the lowly and timid newspaper editor. In their "yoicks, tallyho and away" dash through committee room and legislative hall, they entirely overlooked the humble pharmacists, who also have press-agents, legislative counsel, and committeemen.

For years the pharmacists have also been trying to have their peculiar code of ethics legitimized. One of the things they wanted to have rooted out is the saving doctor who fills his own prescriptions, to their financial loss and his gain. So they cooked up a bill that had the appearance of regularing quacks and private citizens, and the fool doctors looked upon it and said that it was good.

But carefully stowed away in an interior section was a clause permitting the State Drug Inspector to inspect places where drugs were "dispensed." He was armed with powers to enter and snatch drugs and have then analyzed, and to visit enormous penalties upon the possessors of such that do not come up to the standards fixed by the inspector, who, of course, is a pharmacist.

This [law] will, in 90 days from date, permit the inspector to enter the office of the physician who carries a line of pharmaceutical tablets and other preparations and demand that he furnish samples for analysis. If the doctor refuses or evades, he goes to jail. And the chances are that the virtuous and rigid inspector's chemist will find a lot of drugs that will not be up to the mark. Bing! $200 and costs! In a short time the good doctors will learn that it will be cheaper to have their prescrip-

tions filled at a drugstore, where the pharmacist can also get a personal crack at the patient. Great work!

This, of course, is right in line with the pharmacists' program. Look up your number of CLINICAL MEDICINE for May and read the history of the attempted Kansas legislation. The proposed pharmacy law of that state was prepared upon exactly the same lines as the bill which evidently has been passed in Ohio.

This is not a sporadic movement, springing up in this state and that, according to the peculiar grouch of some local druggist or group of druggists; it is, as our Kansas correspondent said in the CLINICAL MEDICINE article just cited, a national movement.

Frankly, the retail druggists are after you. They want your business. They want you to send prescriptions to them. They are going to compel you to stop dispensing, if they can. If they can't do that, they are going to make it mighty uncomfortable for you.

What do you propose to do about it?

WHAT SHALL WE WRITE?*

What shall we write that will be of interest, or that will in any way help any member or advance the interest in and general welfare of our profession?

Recently I read in a medical journal an article the title of which was, "How to Write," in which the writer said: "There are oceans of stuff printed in medical journals and books that merely adds to the bulk and increase the work of the editor, without adding any useful thing to the profession's stock of knowledge." All of us who read current medical literature can not fail to be impressed with the very large number of such papers published, papers that are seemingly written that the writer may display his knowledge, and that are absolutely impractical and useless to those of us who compose the rank and file of the profession.

I frankly confess that such ultra scientific papers are to me but as "a sounding brass and tinkling cymbal," and I believe that a very large percentage of my fellow practitioners will agree with me. Again I quote from the article mentioned above. The writer says: "We are deluged with articles voicing just one idea, 'Send me your patients.' Others are compiled from the works of standard authors that are accessible to every doctor who reads."

In the Bible we can read that, on one occasion, the Angel of the Lord appeared to Saint John in a vision or dream and said unto him, "Write the things which thou hast seen and the things which are." Regularly, twice a year, our secretary appears to me (not in a vision or dream), but by letter or postal card, and says to me, "Write." He is not as kind to me as was the angel to Saint John, in that he does not tell me what to write, but leaves me to solve the question unaided. I am free to confess that I have found the solution very difficult.

We meet here twice a year, for what purpose? The purposes of this society are enumerated in the constitution. Among other things the constitution says, "That, by frequent meetings, and full and frank interchange of views, they [the members] may secure such intelligent unity and harmony in every phase of their labor as will elevate and make effective the opinions of the profession in all scientific, legislative, public health, and social affairs, etc." I would suggest that, to the other purposes of this society we add, "and exchange our personal and individual experiences at the bedside of the sick and afflicted." Why? Because history teaches us that, since the profession of medicine has been known, it has only been advanced and elevated by the personal and individual experiences—and often the life sacrifice—of the members of the profession.

How did the profession, and the world, learn the role played by the mosquito in the spreading of yellow-fever and malaria? Only through and from the personal experience, and life sacrifice, of a few brave members of our profession.

While we know that men and women are all created after the same plan or model, that each sex possesses, largely the same organs, created for the same purposes and possessing the same functions, we soon learn there are differences, learn there are individual characteristics, differences in the development of the different organs, also different mental characteristics, so that no two individuals are exactly alike. Hence I would suggest that we study our cases, but more especially our patients, and note any peculiarities, and when we find anything unusual write it down and report it, so that all of us may share the knowledge and profit by the experience.

If we do this, we shall each and all be benefited, and often someone of us get help over difficulties that, without this help, would have perhaps been insurmountable. For

*Read before the Clarksdale and Six Counties Medical Society, Clarksdale, Miss.

example, many of us know that during the past few months this beautiful little City of Clarksdale was afflicted with quite a number of cases of typhoid fever. While the prominent symptoms in each of these cases were so nearly the same that a diagnosis of typhoid fever was justifiable, I venture the assertion that the physicians treating these patients found no two cases exactly alike; that they found in each case some peculiarity not found in others, and which often forced them, in some particular, to change the routine of their treatment.

These are the things of which we should write; in other words, write of the things we have seen, give our individual experience, always striving, and hoping that we may write something that will help our brother physicians.

H. C. BUCK.

Friars Point, Miss.

FLOODED OHIO

We are printing on this page a picture sent us by Dr. James L. Neave, of Dresden, Ohio, who writes:

"Don't have any flood experience if you can avoid it—it is more pleasant to read about than to be mixed up with. I have been camping for a month and am very far from being straightened out yet. I was run out both of house and office, and when I got back was up against mud and destruction. Maybe a fire is worse. I didn't know that water was such a nuisance. I am enclosing a picture of the square wherein my office is located—it is close to the dentist-sign on the right of the picture."

Main Street, Dresden, Ohio. Home office of Dr. Jas. L. Neave on the right

HOT-AIR APPARATUS: INFORMATION WANTED

I should like to ask all readers of CLINICAL MEDICINE who have a hot-air apparatus the following questions, and have them write me direct:

1. Have you a body-apparatus or a limb-apparatus, or have you both; and what make are they? (2) Should a physician very much interested in the hot-air treatment have both kinds of limb-apparatus; or, if he can afford only one apparatus, which of the two should he have? (3) Do you get good results from your hot-air treatments? (4) When the body-outfit is used, how long do you keep the patient at your office before you allow him to go out, either in the winter or in summer? (5) Have you ever had any bad results in allowing a patient to leave the office too soon, or from any other cause? (6) Do you allow a patient to leave at once after the limb-apparatus was used? (7) Do you prefer an electric, gas, gasolin or alcohol heater?

J. A. BURNETT.

Hartshorne, Okla.

PNEUMONIA, FLOODS, AND OTHER THINGS

I cannot afford to be without CLINICAL MEDICINE now. The active principles—they are so reliable when it comes to a hard pull for life. I push the granules to effect and then keep up the fight for life. Have had several very bad cases of pneumonia on hand this winter and spring, but have not lost one patient—so you see I make good with the tiny little granules—aconitine, digitalin, strychnine, and veratrine; a combination of three in the defervescent compound and the dosimetric trinity. I give the defervescent compound in sthenic cases, and the dosimetric in asthenic ones; whether it be pneumonia, or other type of fever.

I have just read the article by Dr. J. M. French on "The Materia Medica of Active-Principle Therapeutics," and think it is fine and would suit any doctor who knows anything about the treatment of fevers by means of the active-principle method. I heartily agree with Dr. French. In cases of typhoid fever I was taught, under the old plan, not to give calomel after the initial dose. But I see it different now. In place of letting the disease run its own miserable course unhindered and

have its way, we should have a way of combating it and the following is my way:

First give calomel, 1-6 grain, 6 doses; then give castor oil. After free bowel action, use

Flood scene in Missouri, near home of Dr. Hodges

the intestinal antiseptic of three sulphocarbolates to effect. Use the calomel every second or third day to keep the bowels open. Also give nuclein. Strychnine to support the patient. Give tepid baths, with or without alcohol, as convenient.

Give no solid food, but only a liquid diet. When the patient is very frail and weak give egg-nog freely. For hemorrhage, if present, give ergotin and hydrastis, which give good results. Ninety-five percent of my patients get well, some cases being aborted, some cut short many days. So you see I could not get along without those granules and THE CLINIC.

We are now, and have been, in the overflow, as you will see from the two postcards I am sending. One shows my house, and the other my stock-wagon and buggy, and the Cotton Belt Railroad. Just in front of my residence you will see I am standing on the railroad track and also standing in the water, with me being my neighbors, Mr. Paulham and Mr. Winslow, my wife in a boat, and Mrs. Paulham on a box placed on a floating sidewalk at their gate. You see our haste to wear hip-boots to practice medicine in southeast Missouri.

DUFF M. HODGES.

East Prairie, Mo.

THE DAYTON FLOOD

I am sure you will want to hear from Dayton and the fearful flood, the greatest and most destructive inundation ever known in Ohio.

Our city is located in the Miami Valley and here the Stillwater, Mad, and Great Miami rivers and Wolf Creek form a junction and flow to the Ohio River. This valley is one of the most productive sections in the United States, and Dayton is its center and metropolis.

On Friday, March 21, it began to rain over the entire valley, and the rain increased in severity until Tuesday, March 25, filling all the streams, which began to pour over their banks. At 9 o'clock in the morning the levees, or banks, in our city began to break, and by 5 o'clock the lower portions of the city were inundated, the water in places standing 12 feet deep.

By Wednesday noon the flood had reached its highest point, being in some places 21 feet deep, and more than two miles wide. The rush of water was so swift that on streets, alleys, and open spaces it swept away buildings, washed out sidewalks, tore out great blocks of asphalt pavements, carried street- and traction-cars from the tracks, dislodged the great iron railway-bridge, undermined many buildings, and floated all frail buildings and loose objects down the awful current. Thousands of people were marooned in their

Another flood scene—Dr. Hodges ready for high water

homes, unable to get away. Then the relief-boats were brought into service, but there were so few that they could relieve only a small portion. All the while the rain was falling steadily.

It is absolutely impossible to describe the terrible destruction of property wrought or the dreadful scene displayed when the waters subsided. Hundreds of families were rendered homeless, and business of all kinds suffered

A Dayton scene of the work of flood and fire. Near here Dr. Staub saved 22 lives

severely. The loss of life will never be definitely known. The coroner's report to date names 108, but many have lost their lives who will never be found. Some have died from shock and exposure, while the saddest feature is the fate of those who have lost their reason, and are domiciled in the insane asylum, as a result of the terrible calamity.

The photograph showing four houses destroyed by fire during the flood (marked by X) shows where the conflagration originated. Two old ladies, 79 and 83 years of age, respectively, were alone and unable to get out. One started to light the gas, when there was an explosion, blowing out the window and part of the wall and setting fire to the building, while terribly burning the two old ladies. In order to save themselves, they jumped into the water, when one of them drowned, while the other caught hold of some wreckage and was able to hold on till it was my fortune to rescue her.

It so happened that I had just delivered a woman in confinement only two hundred feet from there and was getting into the waiting boat when the explosion took place. Assisted by Mr. Frank Yenger, I hastened to the rescue of the old lady, and then we took 22 persons from the adjacent burning buildings. The old lady I rescued from the water was so severely burned on the hands that her fingernails dropped off, while her face was also badly burned; death relieving her of her suffering four days afterward.

It is not possible to describe the ravishes of the flood, no pen can portray the terrible scenes during and after the high water; at the intersections of streets the current was so swift that it required a good boatman to row across. Several brave men lost their lives trying to rescue the people in distress.

It is estimated that 200 persons lost their lives, that 1200 horses perished, and that $250,000,000 worth of property was destroyed.

The spirit of Dayton is optimistic, and, while it will take time to regain her normal condition, she will yet be a Greater Dayton. We are at this moment anything but in a state of gloom. Civic pride marks the countenance of all. Thousands had thrilling experiences they will never forget. Those who together go through such an experience are made friends and henceforth work together for the common good, while the outside world is drawn nearer.

Everywhere there is great human sympathy, brightened by good cheer, and offers of help and credit. With this assistance, and situated, as we are, in a valley as rich and resourceful as Miami, we shall not be long in getting a fresh and firm footing. Nevertheless, we feel that the government, both federal and state, should not permit such a calamity to visit us a second time. If the streams are properly taken care of, such a disaster cannot be repeated.

G. S. STAUB.

Dayton, O.

THE RELATION BETWEEN GALENICAL PREPARATIONS AND THEIR ACTIVE PRINCIPLES

An important paper from the point of view of medical practitioners was communicated to the March evening meeting in London of the Pharmaceutical Society, in which the author, Mr. H. A. D. Jowett, D. Sc., discussed the question of the advisability of replacing galenical preparations with their active principles. He adduced evidence to show that while the sole use of active principles, either singly or in combination, is the ideal state of administration of remedies, it is at the present time in the majority of cases impracticable.

In spite of the enormous amount of attention which has been given, especially in the last ten years, to the subject of standardization, there exists very little actual knowledge as to whether the therapeutic effect of a solution of the active principles of a drug is equal to that of a galenical preparation standardized to contain the same amount of

*Reprinted from the London *Lancet*, March 29, 1913.

active principles. There are cases, however, in which our knowledge is sufficient to warrant the statement that the galenical preparation can be replaced adequately and advantageously by the active principle or combination of principles. For instance, the preparations of jaborandi are difficult to assay since the percentage of total alkaloid is an unreliable guide to their activity owing to the differing activities of pilocarpine and isopilocarpine, and the determination of the pilocarpine in the total alkaloid is a matter of considerable difficulty; it would therefore appear advisable and preferable to use pilocarpine and its salts in medicine and to abandon the use of the galenical preparations.

A view of wreckage left by the Dayton flood

Another case where the preparation may be replaced by the alkaloid or its salts is that of physostigma; although eserine is somewhat unstable, there are several salts which are stable and very suitable for use in pharmacy. Again, the case of the use of the pure alkaloid cocaine in preference to that of the galenical preparations of coca is strong, and ergot is in the same category. All the known physiological effects of this drug can be explained by the presence of certain bases, and the time has arrived for the medical profession to determine by experience what combination of these bases is necessary for the effect they desire.

Another class comprises drugs from which the active principles have been isolated and investigated, but about which there is a doubt whether these principles represent the full activity of the galenical preparations. The most striking examples of this class is opium. It seems to be universally admitted that a solution of morphine has not the same therapeutic efficiency as laudanum of the same morphine content, and it has yet to be decided to what the efficiency of the laudanum is due; and although it is satisfactory to note that a determined attack is being made on this problem, it is not likely that laudanum will be replaced for many years to come.

Cinchona presents some similarities to opium, inasmuch as the use of its chief alkaloid, quinine, has increased of late years enormously, but the use of the galenical preparations has persisted side by side. Dr. Jowett is of opinion, however, that it might be possible to delete cinchona preparations from medicine and use only the salts of quinine, and he expresses the hope that some therapeutic trials on this point will be made and the matter settled, because there are still a few physicians who believe that preparations of cinchona bark have virtues not possessed by quinine, and this belief has not been experimentally refuted.

Similarly in the case of the solanaceous group there is a number of drugs in which the same active principles occur, but in spite of this the use of galenical preparations is still continued. The three most important of these drugs are belladonna, henbane, and stramonium, and what is needed is more accurate and extended information regarding the therapeutic and pharmacological action of the pure alkaloids and their stereoisomerides and of different combinations of the same; when this has been accomplished the use of the different galenical preparations can probably be abandoned as unnecessary.

Of drugs whose active principles are modified in their physical properties by physiologically inert substances which occur in the galenical preparations the best example is nux vomica. There is no dispute as to the nature of the active principle, and not only is the full physiological effect produced by strychnine, but the presence of the accompanying alkaloid brucine has been stated to be actually undesirable. Solution of strychnine hydrochloride is supposed to have disadvantages compared with tincture of nux vomica, the chief being the danger of precipitation of the strychnine when dispensed with certain drugs, and it is therefore safer to prescribe the tincture in those cases where there is a possibility of the separation of the alkaloid.

Another drug in this class is digitalis. On the supposition that digitoxin and gitalin are extremely potent and that the other glucosides are less active, and with the information that digitoxin is insoluble in water,

it would be expected that a tincture of alcoholic extract would contain the greatest proportion of these active principles, and therefore be most efficient therapeutically. On the other hand we should not expect an aqueous infusion to be as active, since this could only contain a small portion of digitoxin. Yet the contrary is the case, for the infusion, according to the latest researches, is the most active galenical preparation, and digitalis affords a particularly difficult problem.

Dr. Jowett dealt, in conclusion, with drugs where the active principles, if any, that have been isolated in no way represent the full physiological activity of the drug and the galenical preparations of which cannot be standardized either chemically or physiologically. As the chief example he referred to drugs having a purgative action—e. g., rhubarb, senna, cascara, aloes, and podophyllin. Our knowledge of the chemistry of vegetable purgatives as a class is very incomplete and unsatisfactory, and with the exception of aloin, very little progress has been made in the direction of replacing the galenical preparations with the active principles. Cannabis indica is another drug which affords an excellent example of a potent and valuable drug, long used in medicine, which up to the present has refused to yield up its secrets to the investigator.

It is obvious that much investigation remains to be carried out before galenical preparations can be entirely replaced by active principles, and the work should be carried on by pharmacologists, pharmaceutical chemists, and clinicians working in unison.

—*The Lancet.*

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[It is gratifying to know that the active-principle idea is at last receiving belated consideration in such ultraconservative quarters. Its expression is naturally tentative and cautious. Constituted tribunals of science, such as Dr. Jowett represents, are always noncommittal; to which, in this particular case, must be added the temperamental conservatism of the Englishman. All of which is very good and right; and to many of the exceptions and provisos suggested by Dr. Jowett's circumspection, of course, we readily assent. Nevertheless, we cannot help feeling that this conservative spirit is exhibited a little too strongly, not to say unreasonably.

It is quite true, for example, as Dr. Jowett says, that the abstraction and utilization of the active principle in place of the galenical drug is in many cases impracticable, at least in the present state of our pharmacological and pharmaceutical knowledge—although it is undoubtedly practicable to a greater extent than Dr. Jowett credits.

It is also true, as the doctor points out, that, in spite of modern standardization methods, we are still largely in the dark as to the therapeutic equivalence between the active principles of a drug and the galenical preparation standardized to contain the same amount of those principles. But why this should be used, even as a tentative argument, against utilizing the active principles, we cannot quite see. It does not seem that such a consideration is material to the question. At all events, wherever it is material, it militates in favor of the active-principle.

Presumably what Dr. Jowett means is that certain whole drugs appear to have a therapeutic action which transcends the combined actions of its active principles, so far as we know them. Evidently this is what he has in mind, from his later reference to laudanum, which, as he says, has a different therapeutic efficiency, with a given morphine content, to the same amount of morphine in solution. This, however, is one of the disadvantages of standardizing a drug on its dominant active principle, to the ignoring of other principles present in it, and is one of the strongest arguments for active-principle pharmacology. It is interesting to note, in this connection, that laudanum is almost out of fashion in this country, except as a "household" remedy. American physicians almost universally employ the much more dependable and more efficacious alkaloids—morphine and codeine.

Dr. Jowett cites also nux vomica as another instance of this kind, but, curiously enough, offers this example as a plea for active-principle therapy. Except as a bitter tonic nux vomica is also rarely used. Who thinks now of trying to elicit full physiologic action with "nux"?

But, even assuming that in certain cases the whole drug may have, not only a different, but a superior, therapeutic action to that of the combined actions of its active principles, so that for the present we must prefer the galenical in those cases to the active principle—as one must freely admit is the case with cannabis indica—still that constitutes no objection to the abstraction and employment of the active principles in their proper sphere. And, what is still more important, the active-principle method offers practically the only road to an ultimate standardization of the drug, even from that standpoint. With such drugs, no less than with those whose

active principles have been identified with the entire pharmacological activity of the whole, Dr. Jowett's own significant words apply: "The time has arrived for the medical profession to determine by experience what combination of bases is necessary for the effect they desire." In these words Dr. Jowett has summed up the entire philosophy of active-principle therapy.

We cannot refrain from exclaiming, after the English fashion, Hear, hear! to the closing remark of the editorial here reproduced. If only we could have persuaded the profession of this necessary cooperation between the pharmaceutical, pharmacological and clinical branches of medicine in working out the active-principle idea when we first began to preach it, active-principle therapy would have been a *fait accompli* by this time.

We trust that Dr. Jowett's pronouncement will stir up a proper spirit of interest and inquiry in those medical circles which for so many years have turned, one is almost tempted to think, a wilfully deaf ear to the pleadings of truth and reason.—ED.]

BARBER'S ITCH. RHUS POISONING

Observing the treatment for barber's itch recommended by Dr. C. E. Quinn, I will offer my own, which always has proved successful in my hands.

After thoroughly cleansing the affected part with soap and water and wiping it dry, I apply the following ointment twice daily: Carbolic acid crystals, grs. 20; sodium sulphite, grs. 20; washed sulphur, oz. 1; lard, oz. 1. At times this treatment has effected a cure in two or three days.

I have also used the same ointment for ringworm and rhus poisoning. However, in the latter case I avoid the application of water, as this is likely to overlap the inflamed part and thus spread the infection.

I unite with the members of the large CLINIC "family" in expressing deep sorrow for the loss of dear Doctor Epstein. He was the Nestor of progressive medicine in America, distinguished alike for charity, wisdom, and virtue. *In coelo quies* for him.

GEORGE D. STANTON.

Stonington, Conn.

"THAT THY DAYS MAY BE LONG"

Blest is the man who knows when he has had enough. Wise is he who realizes that, of all the good things for which men may strive, the best is the continuance of life, so as to enjoy life's fruitage. Happy is he who sees his progeny growing up, to take over his burdens as his active faculties decline. The stream, erstwhile rushing in power from its mountain source, grows sluggish in the lower levels, but finds its current and volume sustained by fresh springs welling along its bed.

To every man comes the day when the fruits of his labors turn to apples of Sodom in his mouth; when his energies are dashed by the pessimistic suggestion, "What's the use?"

As we learn to trace the physiologic origin of mental phases, we look on such aberrations as pathologic manifestations rather than as ethic or phychic conditions. So, when John Stuart Mill tells of his rescue from this slough by the happy advent of an affinity, although the autobiography describes the connection as purely platonic, the modern physiologist may say nothing, but he does some thinking.

The key to this state of mental fatigue is furnished by writers' cramp. The brain has wearied of the same set of exertions repeated for years, but any new mental combination is accomplished with ease and with the freshness of earlier days. Any change is a physiologic rest. Yet it is unwise to make radical changes abruptly, without preparation. Our bodies in the course of time acquire many little habituations and compensations, the existence of which we rarely suspect but which enable us to transgress the laws of correct living almost with impunity. Sudden changes of the habits of a lifetime, after one has passed the mobile period, betoken rashness and ignorance.

When the business of life begins to pall, the zest gone, the routine wearisome, take a week's rest. Let this "rest" be physiologic. Get thee to the woods, to primitive conditions, surroundings and ways. Inhale the fresh, pure air of the opens. Cook your own meals over a fire of sticks gathered with your own hands—do you so much as know how to gather wood for a fire?

If the results of your week's outing are good, take one week from each month. Next year take each alternate week, and after that make one week of each month suffice for the treadmill. Thus shall you arrive at the possibility of freedom by gradual emancipation. *Tuto et jucunde*, and *cito* enough for the need.

With freedom comes the problem of what to do with it. Let us assume your familiarity with the laws of personal hygiene, as applicable to the aging man. You are aware that

the colon is the habitat of the bacillus senilitatis; you have learned how best to keep your alimentary canal clear and clean. You realize that digestive power declines as age approaches, and that the dietary supply must be regulated by the digestive capacity rather than by the appetite. You are learning by experience the unwelcome realization that you are not as young as you were and that exercise pushed to fatigue entails retribution instead of increasing strength. Business matters are so regulated as to secure to your age an adequate provision for its needs, for you have obeyed the injunction to be "diligent in business."

The meaning of the Antæus fable comes to you, as you realize the renewal of vitality following contact with Mother Earth. You keenly relish the smell of upturned mold, the songs of the birds, the dewiness of morning, the various voices of the night, the forest, the river, the lone places; the miracle of growing plant-life, the interrelations of bird, beast, insect, flower. No mortal ever made a gold-piece sprout or to lay an egg; but see the bulb-spears shoot up through the soil, and note how peach and vine respond to your care.

The first question is, where to live?

Younger men err in seeking to avoid the winter's cold, for it increases vitality. The polar bear withstands even the midsummer heat, as well as other depressing noxæ, better than does the lion born in the Sahara. But we are dealing with men past the developmental era; and, so, we say, it is a mistake for such men to languish under the exhausting heat of midsummer, or to shiver before the blasts of winter, or to spend their days crouching over the furnace-register or to bake in a steam-heated apartment.

The ideal calls for a summer residence far enough north to be enjoyably cool, and another for the winter, located sufficiently south to eliminate the danger of frosts. Conditions of airiness, view, shade, bathing, drinking-water, supplies, accessibility; freedom from disease, mosquitoes, tramps, fashion, and other drawbacks are to be considered.

Taken all together, the shores of the large lakes are to be preferred. Here in Chicago we look to Lake Michigan for summer and the Mexican Gulf for winter as presenting the best opportunities. Go up to Mackinac Island in summer and note the exhilarating qualities of the air. It is well worth the trip. So long as the ties with the great city are not completely severed, we must select a location which, while far enough north to secure that climate's advantages, is yet within speedy, easy and inexpensive reach of the "busy mart of trade."

What to do there?

Relax. Wear old clothes. Don't shave. Go barefoot. Wear a bathing-suit all day, so that you may take a plunge in the lake whenever the spirit moves. Botanize. Gather berries, flowers, mushrooms. Have a farmlet, and raise vegetables, flowers, grapes, berries, fruits, bulbs or mushrooms; chickens, pigs, hares, rabbits, goats, guinea-hens, pigeons, ducks, geese, turkeys, guinea-pigs, foxes, dogs, cats, ponies, cattle, grandchildren. Annex a few fatherless orphans and make them happy while developing them into manly men and lovable women. Robert Morris deserves the thanks of all for suggesting nut-farming as a diversion for elderly men. I have planted, in Michigan, English walnuts from Manchuria and look with interest toward the result.

Don't be afraid of monotony—Dr. Streeter, in that inimitable book, "The Fat of the Land," says: "Monotony! There are more things happen on a farm than you ever dreamed of!" There is no end to the things one may do with a five-acre farm.

Then, when the autumn declines and "November's winds blaw loud wi' angry sugh," we follow the wild ducks to the sunny South. Twenty-four hours from Chicago lands one in New Orleans, whence the gulf coast and that of Lake Pontchartrain are easily accessible. Another day brings Florida within reach. There must be many a good location waiting along the west coast, as yet unspoiled by the demon of "development."

While one is about it, he may as well go beyond the frost-line, there where real luscious tropical fruits may be raised successfully—bananas, oranges, lemons, grapefruit, sapotes, limes, soursops, tamarinds, custard-apples, pineapples, etcetera—and you have to go there to realize what is embraced by that mysterious etcetera. How about a pecan grove? One scarcely has to "raise" pecan-trees—all he has to do is to let them grow. A totally different line of live-stock is possible here, and one may vary his experiences by raising alligators, terrapin, frogs, oysters, and just what else we hope to be in position to say in another year.

The northern summer homes may be connected by a cruising-boat, if one is not satisfied with the opportunities for enlivenment proffered. The run from Chicago to New Orleans by water is one the writer has

made, and thereby enriched his memories beyond valuation.

At each end of the suggested duplex home there are yet to be found tracts that are of little cost in money, although they are being taken up rapidly. Shortly before his death George William Curtis stated that the whole southern shore of Lake Erie had been occupied, by the wealthy residents of Buffalo, Cleveland, Toledo, and other lake-cities, for summer homes. Wooded land along Lake Michigan it now is almost impossible to find unoccupied. Property of this sort bought three years ago as an investment is selling at three times its purchase price today. Shorelands sold a few years ago for the taxes are now bringing $1000 an acre.

The land-hunger increases as cheap Government land becomes a thing of the past. The man who invests a thousand dollars in such property now is apt to find within ten years its value so high that he can scarcely afford to live on it.

But it is foreign to my purpose to advise men nearing age to invest in land with a view to profit. Let that come incidentally, if at all—just something to keep the young ones in due respect for papa's judgment. Get a place, the limit being $1000, for land, house, and improvements; and make of it what you please, the first object being a home.

With such conditions for promoting longevity, the question does not seem to be how long a man may live, but why should he die!

WM. F. WAUGH.

Chicago, Ill.

KEEP OFF YOUR FEET

"Keep off your feet," the doctor said
With mien, oh, quite severe,
"Your being on your feet so much
Will later cost you dear.

"Your trouble's of a nature that
Requires completest rest,
If you will just keep off your feet
Then time will do the rest."

I sat and pondered, when he left,
And thought o'er what he's said,
I'd mind him—for to suffer so,
I might as well be dead!

The doorbell rang, it was the post;
The children came from school;
A neighbor rapped, she's like the loan
Of white thread, just a spool.

Now Johnnie's face was such a sight,
It must be washed right off;
And I must rub poor Susy's chest,
To ease a nagging cough.

The doorbell rang—a caller came;
And quick as she has gone,
Wee Willie came a'weeping in,
He'd had a fight with Don.

And mother was the only one
To set these matters straight.
"Keep off your feet," the doctor said,
I'd jumped up three times eight!

"But now, the children off to play,"
I said, "I'll lay me down
And get a good long rest before
Their father comes from town."

The doorbell rang—an agent now;
I closed the door to hear
The phone-bell ringing merrily—
A voice, "Why Ellen, dear,

"Our church will have a big bazaar.
We've put you on the list
To bake us four or five nice cakes
To sell—I know you will enlist."

The backdoor now—the groceries come.
The meat I must prepare,
For supper-time is almost here,
Each kid a hungry bear.

I get the meal and wash the babes,
And straighten up my hair,
Put father's slippers where they're warm,
And strive my pain to bear.

The meal all done, I then begin
The babes to tuck and tend,
And then go back at last to sit
And mend, and mend, and mend.

My dreams that night were bliss indeed.
I dreamed a white-robed one
Had beckoned me and in my sleep
I gladly followed on.

We came into a peaceful spot
Where signs around were spread,
"Keep off your feet," "Keep off your feet,"
Was what on all it read.

A couch was there, to lay me down
And keep me off my feet,
A cozy, comfy, cuddly chair—
To rest would be a treat.

I would not have to stand or jump
Around a dozen times,
"Keep off your feet," those blessed words
Rang in my ears like chimes.

I felt a peaceful languor then
Come stealing o'er my frame;
"Keep off your feet"—to disregard,
Why, that would be a shame.

I heard a distant tinkle then,
I thought it Heaven's lyre;
"Wake, Ellen, the alarm has rung,
And we must start the fire."

I woke up to another day
Of madly living life.
"Keep off your feet," the doctor said
Ah! would he were a wife.

"Keep off your feet, oh woman,"
And "Time will show you health."
These are a doctor's slogans,
A doctor's way to wealth.

And any woman with a home,
Will laugh to hear it said.
I think I shall keep off my feet
When Time shall find me dead!

"ANNETTE FOWLER."

Pasadena, Cal.

[This was written by a doctor's daughter-in-law, who has been a patient herself. It is a good thing for doctors to know that advice which is easy to give is often difficult to follow.—ED.]

THE MEXICAN PEOPLE AND MEXICAN PROBLEMS

Recent events in Mexico City must seem somewhat strange to our present-day Anglo-Saxon mind, and, really, if it were not for the modern armament used here, one would think himself removed to medieval times.

If we study our own history a little, we find that we do not need to criticize Mexicans for the brutal way of waging war, because when our forefathers made revolutions they were every bit as brutal as are the Mexican of today. Cromwell was not a bit less cruel than Zapata, only then there were no newspapers to horrify their readers; also, the French Revolution does not make us kindly disposed to its leaders, although we celebrate the Fourth of July with ringing of bells and popping of corks and a great deal of prating of the divine rights of people.

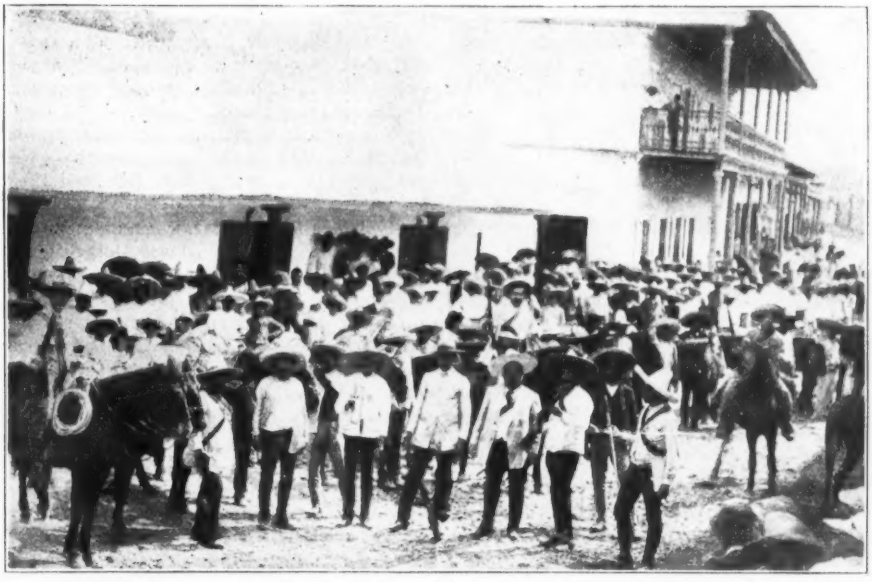
Is it not rather inconsistent how people will yell about their rights and never remember about their duties? Madero belonged to that kind. Dreaming about redeeming a people that really did not want to be redeemed, he does not remind us so much of Christ as of the other redeemer, the hero of Cervantes with his life-work to "*Deshacer lostuertos*"; and by his tragic end he revealed to us the sublime side of the grotesque.

Madero's dreams, however, have cost a country a tremendous amount of suffering, loss of life and loss of wealth; but it has also served to reveal the true character of the people, who, as long as they are held in leash, are of a gentle, if lazy and good-for-nothing, disposition. They have not yet been taught that happiness is a product of their own manufacture. They believe that the government must provide it for them.

When I first knew Madero, he seemed to me a vulgar agitator of the worst type, something of what is known in the United States as a "walking delegate." In his propaganda, he addressed himself exclusively to the worst elements; prevaricating, distorting facts, belittling the noblest ambitions of his opponents, and flattering the vilest passions of his hearers. Yet, it seems to me that the man was honest in his belief, considering himself an apostle and liberator of his people, though himself a product of teachers of anarchistic ideals.

It is said that peace under a bad government is better than a good revolution. Under Madero's government the country would have gone to pieces, for he surrounded himself with the very worst advisers he could get, distrusting the few really good men at hand, both in the cabinet and the army. Men who were doing good work in different parts of the country, putting down the revolution successfully, were removed from their commands and put in places where their usefulness was brought to an end upon the advice of cabinet members and others who fomented the revolution for their own ends.

A fine example of cactus grandiflorus



A company of Mexican rebels

Madero was a paranoiac imbued with his own (perhaps lofty) ideals. He was under the influence of autosuggestion, exercising, as such beings will, a tremendous influence over the ignorant masses, but lacking co-ordination. He became an easy tool in the hands of unscrupulous advisers. He was rich, a member of an ambitious and altogether unscrupulous family. If he had lived, he would have been a constant menace to the present administration, as well as succeeding ones. Since he was a one-idea man, he never would have become reconciled to being ejected from the presidential chair. Legal rights, even though acquired by illegal means, were everything to him.

The United States Government is largely responsible for his death. Huerta seemed to be inclined to clemency and would have been satisfied if he had left the country. By Huerta's orders a train was waiting to take him to Veracruz and all precautions were being taken for his safety. To make this doubly sure, the train was to leave during the night.

In the meantime the American ambassador went to Huerta, by orders from Washington, for the purpose of exacting Madero's safety, since the United States would look with disfavor upon the execution of this man. The ambassador would be expected to retire if anything happened to the deposed president. Huerta gave the dignified reply that he would guarantee Madero's safety if the United States would guarantee Madero's peacefulness in the future. The order for his deportation was countermanded, and that night Madero and Pino Suarez died (by the bullets of their would-be liberators, it is officially stated) when on their way to the penitentiary. At any event, whether their death was caused by friends or enemies, without the interference of the United States Madero would have left that night on the train that was waiting for him and at this time would have been in Cuba with his family or in some other country.

Mexico should be allowed to manage its own affairs in its own way, suited to its own nature. The Anglo-Saxon can never understand the working of the mind of the Latin-American people, any more than he can understand the Orientals. It is a certainty that they cannot be governed by our kind of laws and customs, just as tropical products can not be raised by the methods of the northern farmer. When our own nation was laboring under identical conditions, the people were allowed to develop in their own way and by their own means, without being hampered by the criticism of foreigners and aliens.

Mexico was doing very well, indeed, under Porfirio Diaz, in spite of the fact that unsympathetic foreigners are constantly offering

their criticisms. There were more liberties in Mexico than are enjoyed in the United States. The people were free to work, to make fortunes if they wanted to and had the capacity to do so; and, incidentally, to honor the fatherland by being good and efficient citizens. Also, they might loaf, drink, brawl, and dishonor the country, which most of them diligently did do.

The drunken, brawling, lazy, and thieving element was in evidence everywhere and the jails of the country could never have held them. The better class of people breathed with relief when these good-for-nothings could be disposed of by sending them to *el valle nacional* to work, with a chance to redeem themselves. There they were paid good wages, but they hardly ever received the full benefit of the money, which has to be applied to expenses originated by their own misbehavior.

Then came Diaz's overthrow. This also was contributed to largely by American dollars furnished by Rockefeller and others, but still more by the unfair criticism of Americans. A sample of the latter was "Barbarous Mexico," which was published in *The American Magazine*. By the way, the author of that article has lately published, in Mexican papers, articles about the United States, attacking his own country far more than he ever did Mexico. Since I know he lied when he published "Barbarous Mexico," all decent people must form very unflattering opinions concerning Mr. Turner when he now talks about his own land in the same way.

Mexicans are no worse than other people, except that they are in the same stage of evolution that we occupied a hundred or two hundred years ago.

Imagine our country then, peopled by our forefathers, who were sturdy men and women taught to rely entirely upon themselves for all and every one of their necessities, and then bring such disconcerting elements into their lives as modern railroads, telegraph, steam-engines, etc., and you would have about as much confusion as there is here. We were educated gradually and in a manner which prepared us for the modern changes, which also came to us gradually, while the Mexican Indians and halfbreeds had them thrust upon them suddenly without any preparation whatever. This, very naturally, has thrown them off their balance and as yet equilibrium has not been reestablished. If you add to this the attempt to rule a primitive people with modern laws, you may expect confusion.

You might cite as an example of the contrary the just rule of the English in India, but that example does not hold when you reflect that the administrators of the law in India are Englishmen, renowned for their justness, while here the administrators of justice are men of the same primitive race, who, though educated, have inherited their native traits.

If Mexico and the Mexicans are let alone, they will surely, albeit slowly, forge ahead, and, who knows, some day may serve as examples to the Saxon race. They have produced great and noble men and, though the great mass has degenerated, truly great men are not rare in all walks of life; nay, they are so plentiful (as I shall demonstrate later on) that they are an assurance for the future of the race.

A. R. HOLLMANN.

Apatzingan, Michoacan, Mexico.

THE WORLD OF DWARFS

Ours is a world of dwarfs, with only a sprinkling of giants—mentally, we mean, not physically. Take out the occasional giant—eliminate, in any age, the exceptional big man—and what a really small people we are, after all!

It was only twenty years ago that the last witch was burned; only ten months ago that a poor degenerate was hanged by the neck; only four weeks ago that a man supposedly intelligent on his deathbed ascribed the restoration of his eyesight to a miracle worked during a visit to a "sacred shrine" abroad; only yesterday that a prominent citizen "sat down and ate two pounds of pig," then died.

"All but about one percent of our fellow creatures when in trouble trust to charms, incantations, and the 'saints'," said Osler recently. "Mentally, the race is still in leading strings."

The last witch has been burned (so, at least, we hope), but we wonder how long it will be before the last of the prudes is consigned to oblivion.

All the progress of the world must be credited to the few giants who, providentially, have found their way hither; and in every period, from the very beginning to the present moment, they have *pushed* forward with might and main, while the dwarfs, in one solid body, have determinedly resisted every advance. So, the efforts of the few enlightened people who seek to illumine with the lamp of learning the dark places where vice flourishes meet with constant opposition

million prudes oppose the one big, courageous man who says, "Let there be light."

The man who works in this direction encounters discouragement, opposition, at every turn. At the very outset of his course he experiences the unconcealed distaste of the community for the discussion of "unsavory topics." He bumps up against hypocrisy, full-armed and shrieking.

But it is consoling to note that the trend is ever onward and now at an accelerating pace. The voice of prudery is less emphatic than formerly. Where before there was a disposition to cover over and conceal vice (that it might not "offend a polite society"), there now is a growing disposition to investigate it, with the view to eliminating it, or at least to subtract from it some of its viciousness.

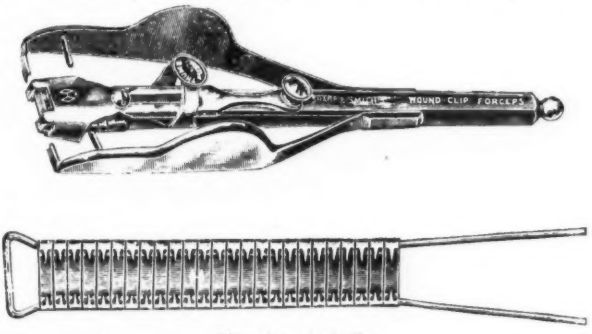
Slowly the truth is being pounded into the mass-mind, welcome or unwelcome. We see the impression that is being made by people of caliber and courage, such as Robinson, for example; also Hollen, of this city, a younger man but yet a virile and fearless writer. The latter, in his latest book, "The Taint," shows up as it never has been before the terrible inroads which the vice-diseases are making in this country under the cover of darkness, while, for the public good, he discusses prophylaxis more fully and with greater clearness than any previous writer. His conviction is that "the longest sermon ever preached is less effectual (toward checking the spread of venereal disease) than a single dram of a good prophylactic."

DROPSY DURING PREGNANCY

During the past twenty years I have had considerable experience with women suffering from albuminuria during gestation. My method of treatment is, largely, to give full doses of the powdered extract of apocynum (reliable make), rubbed up with sugar and put into capsules, one of which is administered before each meal.

In some very severe cases I give at the same time, singly, either specific tincture of cactus, or specific tincture of convallaria in pill form, or cratægus, also given three times per day. In my hands this medication has proven invaluable and is very prompt in its effect.

Zanesville, O. G. STRATTON FARQUHAR.

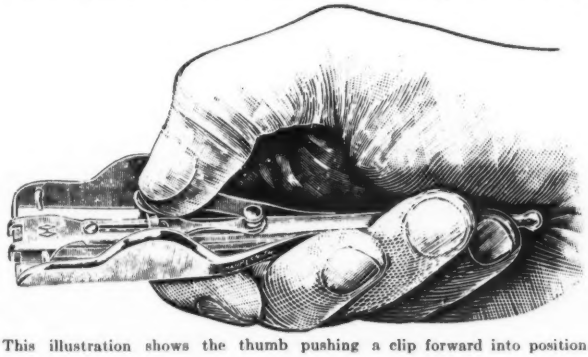


Magazine of 25 clips

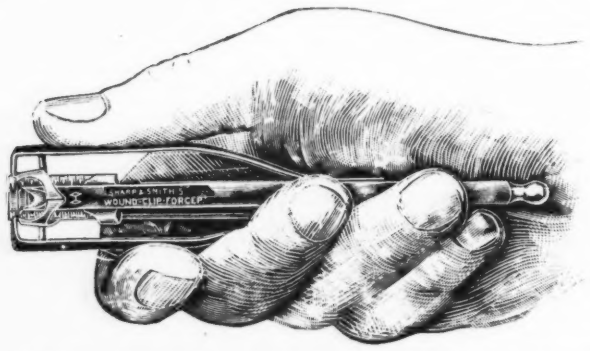
[Thank you, doctor, for the suggestions, and let us have more. Our own method is much the same, except that we depend upon the more concentrated preparations of these drugs. With cratægus we have had little experience, but it seems to be a valuable remedy. Attention to the alimentary tract is, of course, imperative in these cases.—ED.]

THE NEW WOUND-CLIP FORCEPS

The wound-clip forceps illustrated herewith is a new device which the writer believes will meet with the decided approval of every physician doing any minor surgery. The instrument is selected for particular notice for the single reason that it renders the busy doctor independent of sutures and needles (usually inavailable in an ideal form when most urgently needed) and enables him to



This illustration shows the thumb pushing a clip forward into position



This illustration shows a clip in position ready for application to wound

secure perfect apposition of wound edges without torturing his patient or subjecting him to the danger of stitch abscesses.

The device is small enough to be carried in the pocket and so simple and certain in operation that anyone can use it effectively. With the forceps and its magazine of aluminum clips goes an apposition forceps with which the lips of the wound are brought together. The jaws of the suturing instrument then ride the apposed edges and a single pressure of the surgeon's fingers fastens the minute-toothed metal-clamp in place. Another movement of the thumb brings the next clip into position and it is possible to suture a four-inch wound in two or three minutes. The clips are flexible and any degree of tension can be secured by elevating or depressing the center of band when in position.

The illustrations tell the rest of the story. The appliance is marketed by Sharp and Smith, Chicago.

G. H. CANDLER.

Chicago, Ill.

CRIMINALS AND WAR

Language is the medium of expression whereby two human beings may transfer their thoughts. But sometimes the transfer is marred in passage, and the thought is not presented to the recipient exactly as it left the mind of the sender.

Something in my editorial of the April issue, entitled "Crime Wave Versus War," made a reader very angry. He wrote and told us so. We have studied the offending screed again and again, but, still, we are not sure what did offend him.

Possibly he may have construed our words into a reflection against the soldier and questioning of his patriotism. Well, the writer has himself worn his country's blue and faced death in her service; so that he is not likely to undervalue the brave men who rallied to her cause. But he adheres to his story, and believes that a war might have drawn off most of these young bandits, and given their activities a free scope and legitimate employment. He has no sympathy with crime, but much with the criminal, especially when he sees reason for attributing his derelictions to unnatural environment and repression of faculties designed for noble uses under suitable conditions.

These rascals have shown daring, adroitness, cleverness in their "get-aways"; in truth, about all the qualifications characteristic of the successful soldier, those which go to the makeup of the popular hero—and that these men are such in the eyes of numerous adolescent youths of both sexes, may be readily ascertained by anybody who cares to investigate.

W. F. WAUGH.

Chicago, Ill.

ILLINOIS DOCTORS AGAIN!

In the editorial department this issue we have called attention to some legislation pending in the Illinois legislature.

There is one other bill with which you should be familiar. I refer to the Manny bill (Senate Bill 381). This is a proposed pharmacy law, and in the main seems to be all right. However, it has been suggested to us that it is not just clear how this bill will affect the dispensing physician.

There should be nothing obscure about bills of this kind. Too many "jokers" have appeared in apparently harmless bills, as an illustration of which I refer you to the item elsewhere concerning the Ohio law, which was passed so quietly during the last day of the session of the legislature that even doctors who happened to be members of the legislature said they knew nothing about it.

Request your members of the legislature to watch the Manny bill—watch it until it is finally disposed of. Attend to this matter.

In this connection, let me remind Florida physicians that a number of bills inimical to their interests are pending in that state.

JUST AMONG FRIENDS

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

WHAT I am about to say this month is rather personal, but in view of the fact of its interest and significance I am sure I shall be pardoned for mentioning my personal experience and the institution I am connected with as Medical Director.

I came to Mudlavia in the early spring, and I have been greatly impressed since I have been here with the urine analyses. In nearly every case of rheumatism, sciatica, gout, neuritis, and nervous affection the patient has shown a very high degree of urinary acidity and, in the majority of instances, a large amount of indican. The systems of these patients are clogged with waste matter: acid waste products, that have accumulated during the winter months, when they have eaten more and eliminated less than they do in the summer months. This is the reason why more people suffering from diseases that are produced or aggravated by autointoxication frequent sanitariums and hospitals and consult physicians more in the spring than at any other time of year.

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Autointoxication is very common and should always be taken into consideration in the treatment of any disease, but I find it is an element in almost every disease I have occasion to treat. It is a potent factor in the trouble of nearly every patient who comes to Mudlavia, and the Mudlavia treatment is largely directed to the eradication of this condition.

The doctrine of autointoxication is a very old one, the central idea of the primitive conception surviving in the term rheumatism as applied to a condition due to the autointoxication resultant upon systemic suboxidation. Many of the morbid states now regarded as autotoxemic were, of old, charged to "rheums." Obesity and allied states were placed, in the sixteenth century, in the nosologic position they occupy today.

In Sydenham's time, the effects of these conditions were even better recognized than during the middle decades of the nineteenth century. Sydenham pointed out that suppressed gout (that is, gout without joint expression) exercised marked influence on the constitution. "The body," he remarks, "is not the only sufferer, and the dependent condition of the patient is not his worst misfortune. The mind suffers with the body, and which suffers most is hard to say. So much do mind and reason lose energy as energy is lost by the body, so susceptible and vacillating is the temper, such a trouble is the patient to others as well as himself, that a fit of gout is a fit of bad temper. To fear, anxiety, and other passions the gouty patient is a continual victim; while, as the disease departs, the mind regains tranquility."

Autointoxication is a broad term; the condition manifests itself in various ways. When we speak of autointoxication, we think once of faulty digestion, hepatic insufficiency, imperfect elimination, and defective metabolism.

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Probably the most common form of autointoxication is what has in recent years been termed acidemia, a condition of the body in which there is an accumulation and retention of an abnormal amount of certain acid waste products. The mixed 24-hour urine is normally acid in reaction, the acidity being due to certain acid salts, principally diacid-sodium phosphate (NaH_2PO_4), although other acids salts are usually present, but in smaller amounts. The urinary acidity, contrary to the general belief is not in the least due to the presence of uric acid.

The normal degree of acidity of the urine is from 30 to 40. When the degree is below 30 (the difference between the degree indicated and 30 shows the degree retained in the system), it indicates renal insufficiency or a decided suboxidation, this producing renal strain. In cases in which the degree of acidity exceeds 40, imperfect oxidation is extreme; which, irrespective of the types of acid, underlies, and is now almost generally recognized as, severe constitutional stress allied to that of diabetic acidosis.

Harrower writes as follows: "The index of urinary acidity undoubtedly varies in direct ratio with the metabolic changes going on in the body. The manufacture, as waste products, in the body-cells, of acid substances—of which sulphuric acid is probably the most important—must have a decided influence on this factor. In addition to this, certain products of intestinal putrefaction when absorbed into the blood are eliminated in the urine and thus serve to increase its degree of acidity. . . . The examination of a large number of specimens leads me to believe that high urinary acidity is associated in a majority of cases with low urea output and with other metabolic disturbances, possibly of the uric-acid type, but not necessarily so."

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I have found that high urinary acidity and indicanuria quite frequently are associated, and I begin to believe that this high acidity is due to the same conditions that cause the presence of indican and the conjugate sulphates. At all events, in patients showing excessively acid urine, bacteriological examination of the feces, in a majority of cases, demonstrates a severe infection within the intestines, together with putrefaction of their contents and the inevitably resulting autotoxemia.

High urinary acidity, indicanuria, and a low urea-index are very closely related and have a definite effect, the one upon the other. In the majority of chronic diseases, these conditions exist; especially do we find a marked increase in the number, of acid-units eliminated, per day, in tuberculosis, rheumatism, neurasthenia, and many other obscure and abnormal conditions associated with autointoxication.

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The vital process or combination of processes, variously described as change of tissue, tissue metamorphosis or *metabolism*, includes most of the mechanicochemical operations inherent in animal life: respiration, circulation, alimentation, nutrition, excretion; the mysterious association of function, by which substances of certain quality are taken into the body as food, digested by the ferments of the alimentary canal, assimilated and absorbed into the blood, given off again to support the structures of the body, and ultimately converted into heat, force, vitality, and *life*.

In every living organism there is simultaneously in progress a building up and a tearing down of tissue; a constant interchange of usedup for, fresh, utilizable material. A certain energy is expended in the process of excreting and getting rid of the effete products of combustion, which, having fulfilled their parts in nutrition, no longer are of use in the system. This process is *retrogressive metabolism*.

The loss so caused is compensated for by the intake and assimilation of new substances, which are so constantly devoted to the recuperation of the economy—this process is *progressive, or constructive metabolism*.

Any sluggishness or impairment of either or both of these great functions—whether they are the result of defect in some particular organ, or a general dyscrasia, such as malaria, scrofula, rheumatism, gout or specific infection—soon manifests itself in some form of ill-health.

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Aside from hereditary predisposition, gout and rheumatism start with a common pathogenesis: primarily, defective digestion and faulty assimilation, with consequent disorder of the nutrient process; and, subsequently, an excess of acid material in the blood. Hence, the earliest therapeutic indication is also in common—to provide alkaline carbonates in order to neutralize abnormal acidity. But, from this point their courses so diverge, therapeutically, as well as pathologically, that it has even been proposed to confirm *a posteriori* a distinctive diagnosis of the more prominent influence in the hybrid condition termed *rheumatic gout*, by testing separately the remedial power of their individual specifics—colchicine, alkalis, and the salicylates.

The more chronic forms of gout and rheumatism, however, resemble each other in many respects, notably in the benefit the victims derive from the use of the alkaline-saline waters and elimination through the skin by means of various baths.

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As the outcome of heredity or of injudicious feeding, or of both, an excess of uric acid and other acid waste products appear in the blood; which, according to the best but still obscure researches of biological chemistry, are, under certain conditions, liable to crystallize in the tissues, and thus give rise to severe inflammation, pyrexia, swelling of joints, and intense pain—the simplest expression of acute gout. The treatment consists in local sedation, warmth, colchicine, and antiphlogistics. Mineral waters, from the point of effective medication, have at this stage no definite utility,

and, if unwisely administered, would probably aggravate the symptoms by their generally stimulating influence.

In the intervals between those attacks, on the other hand, when it is intended to improve the constitutional condition and correct the abnormal state of the blood, which is liable at any moment to renew acute mischief, we have, in the Mudlavia treatment, a treatment of direct and invaluable potency.

The successful accomplishment of the requisite chemical changes in the blood and the safe disposal of the resulting products are, however, by no means simple matters. When alkalis are brought into contact with uric acid, alkaline urates (of sodium, calcium, lithium, as the case may be) are the result; and these, if perfectly dissolved and sufficiently diluted, and not in excess of the eliminative capacity of the excretory organs, are thrown off without trouble; and the desired end is thus safely attained. When, however, a large quantity of alkaline salts are introduced into a system hypercharged with uric acid, and full provision for the solution and removal of the resultant urates is not at the same time assured, or when, by too rapid solution of deposits of uric acid—previously inactive in the tissues—an unwonted quantity is set free in the circulation, an acute attack of gout is not unlikely to be the consequence.

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This is the explanation of those unfortunate crises which occasionally occur during an apparently well-directed course of alkaline waters; and which are responsible for the impression, not uncommon among podagric wiseacres, that "it is better to leave the gout severely alone." So it is, until one has learned to handle the remedy.

But such attacks may be avoided and, yet, the constitutional condition corrected, by proceeding carefully with the earlier treatment, without unduly hastening the chemical changes; and further, by selecting waters which, by a suitable combination of alkalis and salines, not only accomplish the first indication of neutralizing excessive uric acid, but, in the same degree, provide for the dilution and elimination of the resulting urate compounds.

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An insuperable obstacle to summarizing a treatment of gout lies in the frequency and variety of associated ailments: some causative, others consequential. Dyspepsia, enlargement of the liver, spleen or pancreas, inactivity of the kidneys, torpidity of the intestines, general organic stasis or the condition described as abdominal plethora are all prominent contributing factors in the induction of gout. Fortunately, the same treatment indicated for uncomplicated, or "regular," gout is usually of a nature to be directly serviceable to each of these contributory conditions. There are also a number of minor ailments, such as skin diseases, catarrhs, and the like, which are directly the products of constitutional gout; and bearing upon them the stamp of the dyscrasia, are thus, independent of special characteristics, brought within the scope of such eliminative treatment as the Mudlavia treatment.

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Skin diseases figure prominently in the category of maladies curable by this treatment. These affections, in most instances, are but an expression of some morbid constitutional condition; and so, will be indirectly benefited by any treatment tending to promote nutrition. And so manifest is the influence of this treatment upon the function of the healthy skin, that it is impossible to doubt its alterative potency in the abnormal conditions of that important organ. It is difficult, however, to believe that the immediate application of lithia-impregnated mud can be advantageous to a surface already characterized by hyperirritability, but such is the case.

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The phenomena of arthritis deformans bear a marked resemblance to the trophic changes of tabes, and it is by no means improbable that sometimes they are due to the two states produced by autointoxication. The chronicity has so deranged the trophic mechanism that irritation changes result from the products of autointoxication. The influence of these factors can be shown experimentally by section of the sciatic nerve in rabbits and injection of irritating material above the median line of the body. As a result, the side upon which the sciatic nerve was severed is attacked by arthritic changes like those of arthritis deformans.

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The therapeutic management of acidemic autointoxication depends upon the type. In irritable weakness, while removal from familiar surroundings is desirable for permanent recovery, much may be attained by regulation of diet, administration of appropriate alkalis, including alkaline mineral waters, regular moderate exercise and massage, besides hydrotherapeutic measures.

(*To be continued*)

AMONG the BOOKS

BRILL: "PSYCHANALYSIS"

Psychanalysis: Its Theories and Practical Applications. By A. A. Brill, Ph. B., M. D., Chief of the Neurological Department of the Bronx Hospital and Dispensary; Clinical Assistant in Psychiatry and Neorology at Columbia University Medical School; Formerly Assistant Physician to the Clinic of Psychiatry at Zurich. Philadelphia and London: W. B. Saunders Company. 1913. Price $3.00.

Whether or not one accepts Freud's startling theories concerning the nature of the various neuroses and psychoses, he must admit that this distinguished psychiatrist has devised a method of diagnosis and treatment which is at least relatively logical. For the first time psychotherapy, so called, has been reduced to a system.

Brill has presented Freud's theories in an exceedingly attractive way. While he writes with all the enthusiasm and all the conviction of the disciple he has certainly done English readers a great service in presenting his master's ideas in a way easy of comprehension.

Reduced to its lowest terms, Freud's central idea is that the diseases usually diagnosed as neurasthenia, hysteria, psychasthenia, and the numerous borderland psychoses, are essentially due to emotional repression, almost always if not invariably sexual (using the word in its broadest sense) in type. Brill quotes Freud as saying: "In a normal vita sexualis no neurosis is possible." Inversely, therefore, every neurosis depends somehow upon an abnormal sexual life—or rather upon sexual repression, possibly dating back to the childhood of the individual and lost to conscious memory. To follow Freud and speak in symbols we may say, therefore, that neurosis or psychosis is due to a constipation of emotions, resulting in persisting mental autotoxemia—if we may use that word in this connection. It is quite appropriate, accordingly, to designate the treatment employed by the Freudists to relieve the repression as "catharsis," since it purges the psyche of the offending matter.

To uncover the cause of the neurosis Freud resorts to what he calls "psycanalysis." This is a practical diagnostic method and it has a practical therapeutic application. It is applied in various ways, but in none more interesting than in the interpretation of dreams. All dreams, it seems, have a sexual origin; they are not a senseless jumble; they always treat of the inmost thoughts of the dreamer; and each is found "to contain the fulfillment of a wish." The language of dreams is one of symbols. The Freudist seeks to understand and interpret these symbols, and through them to burrow into the subliminal and bring the repressed emotion to the surface of consciousness. When this can be done relief is possible. This is "catharsis."

The same methods are employed by Freud in the interpretation of the compulsion neuroses, and to a certain degree in the explanation of wit. Brill's chapter upon the latter topic is an exceedingly interesting one. So is his description of the technical side of psychanalysis; also his chapter upon the psychopathology of everyday life. Indeed the whole book is one that will hold the attention of the physician reader from beginning to end.

Freudism is already the center of a bitter fight among neurologists and psychiatrists. It may change the entire conception of nervous and mental diseases and their treatment, and it is therefore essential that physicians generally should understand it. We advise you to purchase this book.

"PROGRESSIVE MEDICINE"

Progressive Medicine: A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by Hobart Amory Hare, assisted by Leighton F. Appleman. March 1, 1913. Philadelphia: Lea & Febiger. Published quarterly at $6.00 per year.

The contents of this number include reviews on the surgery of the head, neck, and thorax; on infectious diseases, including acute rheumatism, croupous pneumonia, and in-

fluenza; on diseases of children; and on rhinology, laryngology, and otology. *Progressive Medicine* is an excellent digest of the literature and a desirable aid to the general practitioner who wants to keep up with the times.

ROSE: "NAPOLEON'S CAMPAIGN IN RUSSIA ANNO 1812"

In our October number we announced the forthcoming publication of Dr. Rose's medical history of Napoleon's campaign in Russia in the year 1812; now this book has made its appearance, being published by the author, at 173 Lexington Avenue, New York, and selling for $1.00.

The reviewer has always had a more or less distinct remembrance of the horrors of that great retreat, partly from his reading when a boy, partly from occasional references found in the literature, but he has never seen such a full description of the terrible hardships which the poor dupes of Napoleon's vanity and thirst for power were obliged to undergo on their return from Moscow. Dr. Rose's tale has an added interest to the physician, because it deals more particularly with the principal diseases that the surgeons of the grand army had to contend with, and because, also, it gives us an insight into the terrible conditions prevailing at that time in the field hospitals and in the sanitary service.

The book must be read to be appreciated. It is one of those volumes that are peculiarly adapted for the doctor's leisure reading, because they do not only entertain but instruct as well, while doing the latter in a manner that does not impose any excessive strain upon the mind.

"SURGERY, GYNECOLOGY AND OBSTETRICS"

The beautiful Chicago publication, *Surgery, Gynecology and Obstetrics*, has recently undertaken something new that promises to be one of the biggest things ever introduced in medical journals in this country.

Hereafter Dr. Martin will publish in his journal, as a supplement, what he calls an international abstract of surgery. This not only will consist of abstracts of everything worthy of record produced in the surgical field in this country, but also a strong working alliance has been made with the *Zentralblatt fuer die Gesammte Chirurgie und Ihre Grenzgebiete* and the *Zentralblatt fuer die Gesammte Gynaekologie und Geburtshilfe Sowie Deren Grenzgebiete*, in German, and the *Journal de Chirurgie*, in French. This will enable *Surgery, Gynecology and Obstetrics* to present every month an exhaustive encyclopediac record of everything that is being done in the surgical world.

For instance, in the February issue, which we have at hand, there are more than one hundred pages of this abstract matter. This additional material, while practically doubling the size of *Surgery, Gynecology and Obstetrics*, will be included in that journal without extra charge. This innovation will, it seems to us, render this publication absolutely indispensable to every physician who specializes in obstetric work, and most desirable to every physician who is at all interested in this rapidly progressing field.

"THE PRESCRIBER"

The Prescriber: A monthly journal dealing with therapeutics and treatment. Volume VII, April, 1913. Special double number, "Hormone-Therapy." Price one shilling and a half; bound and interleaved, two shillings, nine pence, postpaid. Published at 137 George St., Edinburg, Scotland.

We have repeatedly expressed our appreciation of this bright journal that is published in Scotland, and find our good opinoin fully confirmed by the makeup of the April number, which is devoted entirely, in reading pages as well as in its advertising pages, to the subject of hormone-therapy, which has come to the fore so much in recent years, and which bids fair to establish drug-treatment on a solid scientific foundation, not alone in regard to opotherapy, but also in regard to vegetable and mineral drugs, the action of which is elucidated in many instances by a close study of the hormones.

This hormone-number presents the principal information available on the subject as completely as it is possible to find it condensed into a small space. The editorials and original communications, which all deal with the same subject concisely and pithily, are supplemented by a large number of abstracts from current literature dealing with hormone-therapy in general, with the adrenal, the thyroid, and pituitary glands, the pancreas, the peristaltic hormone, and so on. In place of the department of book reviews, the principal publications that have appeared on the subject of hormone-therapy are mentioned, and these are followed by a bibliographic summary of the references to the hormones in recent medical literature.

We congratulate *The Prescriber* upon this splendid number, and cordially invite our readers to order this special little pamphlet, feeling sure that it will be of great value, especially in the bound volume, since additional notes can easily be made on the blank pages which are inserted between the printed pages.

Our subscription department will be glad to take orders for special numbers or for subscriptions for the journal.

"ENCYCLOPEDIA OF MEDICINE AND SURGERY"

The Practitioners' Encyclopedia of Medicine and Surgery, in All Their Branches. Edited by J. Keough Murphy, M. C. (Cantab.), F. R. C. S., surgeon to the Miller Hospital for South East London; senior assistant surgeon to Paddington Green Hospital for Children. London: Henry Frowde, Oxford University Press. 1912. Price $7.00.

This, in our opinion, is the most concise, comprehensive, and withal satisfactory attempt that has ever been made, and made successfully, to constitute in a single volume a practical encyclopedia of medicine and surgery, in all their aspects, so that the busy practitioner may here at once find reliable information, simply and clearly set forth, upon all subjects with which he may be called upon to deal in his daily work. For all parts of this work experts have been selected upon subjects within their own special provinces, and they have contributed articles conveying in the most definite and succinct manner the latest available information.

There will not be found, as a matter of course, any anatomical or pathological details, except where these are of practical application; nor any full description of surgical operations. These are outside the scope of general practice, and this book is designed to be a practitioner's encyclopedia—a book of ready reference. The contents are arranged under sections familiar to the practitioner, so that he will find it easy to refer to its pages for such help as he may need at the moment, while the index provides the fullest possible cross-references.

CABOT: "PHYSICAL DIAGNOSIS"

Physical Diagnosis. By Richard C. Cabot, M. D., assistant professor of medicine in Harvard University. Fifth edition, revised and enlarged. With 5 plates and 268 figures in the text. New York: William Wood & Co.

We have always regarded Dr. Cabot as the best exponent of the modern science and art of diagnosis in this country, and have considered his work on diagnosis as the best exposition of the subject offered in this country. After a perusal of this, the latest, edition, we see no reason to change our opinion.

The new edition has been brought thoroughly up to date. The most important additions are the sections on the phlebogram and the arteriogram, the recasting of the section on blood pressure and the arrythmias, as well as of those on neoplasms of the lung and pleura, on subphrenic abscess and peptic ulcer. Radiography also has come in for additional attention, especially in relation to gastric diagnosis by means of bismuth. The feature of Dr. Cabot's exposition which, above all others, commends it to our approval, and renders it peculiarly valuable for teaching purposes, is its broad, basic character. He deals with diagnostic principles rather than with catalogues disease-pictures; so that his book has a range of usefulness greatly transcending the limits of its own actual contents.

BERNAYS': "RULES OF SURGERY"

Golden Rules of Surgery. By Augustus Charles Bernays, A. M., M. D., M. R. C. S. Second edition, revised and rewritten by Wm. Thomas Coughlin, M. D., assistant professor of surgery at St. Louis University. St. Louis: The C. V. Mosby Company. 1913. Price $2.25.

This little book truly exemplifies the hackneyed *multum in parvo* description, and is full of the meat of common sense and practical helpfulness, delightfully seasoned and served. Of course, there are a great many changes and additions in this second issue of the volume, to meet our later altered and advanced viewpoint; but all that relates to the fundamental rules of surgery is retained from the first edition—amply sufficient to make us feel that we still have with us, in living, active presence, the compelling influence of that master-mind from which the book originally sprang.

Most of us are still willing, nay, eager, to learn at the feet of Augustus Charles Bernays. Indeed, in many respects the surgical world is just "catching up with Bernays," for he was, as most geniuses are, far ahead of his times. There is a book somewhere called "The Common Sense of the Sciences." That is a title which might well be paraphrased to fit this little manual of Bernays'. It represents essentially the common sense of surgery.

CONDENSED QUERIES ANSWERED

PLEASE NOTE

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

QUERIES

QUERY 5910.—"Alopecia." A. L. F. Washington, is treating two very bald heads of the worst type with every indication of perfect success. He was recently informed that the specific tincture of jaborandi, given in 15-drop-doses three or four times a day, was a promotor of the growth of hair on hairless heads, and he now concludes that the active principle (pilocarpine) would be even more effective, knowing that much of the jaborandi on the market is not reliable.

One of the active principles of jaborandi has long been recommended as an effective preparation in some forms of alopecia. Thorough elimination, perfect digestion, and stimulation of the skin of the scalp, massage, and application of local stimulants are the main underlying principles of any effective treatment of baldness.

The arsenates of iron, quinine and strychnine after meals prove an excellent tonic alterative; pilocarpine, with nux vomica and capsicum or strychnine hypophosphite may be given between meals. A very useful local application is quinine bisulphate, 30 grains; tincture of myrrh, 4 drams; tincture of cantharides, 1 dram; bay-rum, to make 4 ounces. The lotion should be rubbed thoroughly into the scalp at bedtime.

There is, of course, a vast difference between simple alopecia and loss of hair caused by some parasitic disease of the scalp. You will find carbenzol soap to be the best thing of this kind under such circumstances. The scalp should be washed thoroughly with it three or four evenings in succession, and then a 1:1000 solution of mercury bichloride brushed in. Continue until slight irritation is produced, then substitute the following lotion: vinegar of cantharides, 1-2 dram; mercury bichloride, 1 grain; spirit of camphor, 3 minims; water, 1 ounce. Apply carefully at bedtime.

QUERY 5911.—"Traumatic Monorchidism." J. A., New York, asks our opinion on a rather strange case. A young man, now seventeen years old, at the age of twelve fell on a fence and one testicle was driven into the body, and has remained there ever since. He never told anyone of this mishap until recently, when he asked our correspondent whether anything could be done for him as all sexual development had ceased more or less since the fall. He is embarrassed, for whenever he goes swimming with other boys they make fun of his condition.

We regret that you did not give us clearer clinical data. Try to locate the testicle, then describe more minutely the condition of the parts generally as found. But, doctor, are you sure that this boy's testicle really was "driven up into the body"? It strikes us that, if the boy struck the fence with force sufficient to drive the testicle high up into the inguinal canal, the services of a physician would have been requisite, and the organ would have been removed or brought down; were it crushed, removal would have been essential; whereas, if it merely was pushed up into the canal, it would have descended unless the inflammation set up resulted in fixation by adhesions or reduction of the caliber of the canal.

Is it not possible that the boy was a monorchid from birth? As you are aware, undescended or misplaced testicle occurs in one out of about five hundred males. There are four types: (1) where the organ is in the abdomen; in its original fetal position; (2) where it is at the internal ring; (3) where it is in the inguinal canal; (4) where it is situated outside of the external ring. A misplaced testicle may be situated either in (1) the perineum, (2) or in the thigh at about the locality of a femoral hernia, for which it may at times be mistaken.

Most of the textbooks dismiss the subject with but a very few words. It has been definitely proven, though, within the last few years, that by careful dissection misplaced testicles can practically always be drawn down and made to stay in the scrotum; Bevan's operation usually being selected for the purpose. Thitry-four operations mentioned by Keen were completely successful.

The dangers of retained testicle may be enumerated as follows: the possibility of hernia; tendency to serious lesions; epidymitis; atrophy; twisted cord; gangrene; direct injuries by external violence; probability of malignant disease; worry and consequent mental depression resulting from deformity.

The treatment for misplaced testicle, whether located in the perineum or in the thigh, is practically the same as for undescended ones. As already pointed out, a traumatism severe enough to "drive the testicle into the adjacent tissue" would be accompanied by laceration of the scrotum or the formation of a hematoma or hematocele, that is, effusion of blood into the tunica vaginalis. As under such circumstances it would be necessary to remove the blood clot, we can hardly believe that your patient actually sustained the injury he describes without having required medical attention; rather it is much more probable that the boy's testicle upon the affected side never completely descended, but the injury to the region served to call his attention to the abnormality.

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QUERY 5912.—"Typhopneumonia; What Is It?" A. L. S., Oklahoma, wants us to tell him whether "there is such a condition as typhopneumonia," and he goes on to describe some recent experiences which lead him to answer in the affirmative. He says:

"I am having a series of pneumonia-cases, and the thing that puzzles me most is the continued high fever in each instance. I also am treating typical cases of pneumonia which terminate in seven to nine days. In the same family there is a history of the same conditions that prevailed in the typical cases, but the symptoms are masked and the temperature ranges from 103° to 105° F. continually. Sometimes I think my thermometers are wrong; but I have three, two for the mouth and one anal. These cases of high fever with delirium worry me considerably. I understand there is such a condition as typhopneumonia, but I take it to mean that the fever resembles that of typhoid fever. True, I have not made a Widal test, which presumably would set all my doubts at rest, but my treatment has proven very satisfactory so far as results are concerned. The point I want to get is this: do we have symbiosis in such conditions? In some infections, I know, symbiosis increases virulence, but is it so (if there is such a thing) in typhopneumonia?

"My treatment has been to clean out, clean up and keep clean, giving fractional doses of calomel, followed next morning by a saline laxative, then the intestinal antiseptic of the sulphocarbolates. For the distressing cough, I use codeine or heroin. Externally I employ guaiacol, applied to the chest and covered with cotton batting. For the nervousness and high fever, I give wet-packs and spongings. One of the most distressing symptoms in this condition is tympanites, and for this I order turpentine stupes, and oil of turpentine (3 or 4 drops on sugar) internally. For stimulation, I give strychnine, as much as 1-30 grain every four hours.

"My results are flattering; still, to be frank, I do not at all times see my way out, although by the aid of Providence and of kindly nature I have so far overcome all obstacles. I am a firm believer in the idea that pneumonia can be aborted if the right treatment is instituted early, but that, if you are late, it looks as though it becomes a case of self-limitation. If my treatment is not right or not rational, I want to know it."

Modern writers rarely speak of typhopneumonia or of typhoid pneumonia, as once was the practice. Of course, pneumonia may occur as a complication of typhoid fever, while, although much more rarely, typhoid infection sometimes manifests itself in a pneumonia patient. In that case, of course, the doctor would be dealing with a mixed infection, and it hardly needs to be pointed out that under such circumstances the condition of the patient is extremely serious. Still, the virulence of the toxins generated by the invading bacteria is not necessarily increased.

The preceding generation of clinicians employed the term "typhopneumonia" to describe a particularly serious adynamic type of the disease presenting typhoidic symptoms. Prostration, in this state, is extreme; there is delirium or stupor; the temperature may or may not be high, but the respiration and pulse are almost always frequent; the skin is dry and shows a dusky tint, or it may be slightly jaundiced; the tongue is dry and brown (resembling that in the typhoid pa-

tient); splenic enlargement is perceptible; convalescence is tedious.

Eichhorst, in his "Practice of Medicine," says: "Constitutional infection of especial severity attends asthenic pneumonia, which has also been designated typhoid, putrid or malignant pneumonia. The patients attract attention from the outset, on account of the marked presence of delirium, sordes of the lips and gums, distention of abdomen, enlarged spleen, diarrhea—symptoms suggestive of the clinical picture of typhoid. The bacillus typhosus is not discovered, and practically in all instances the Widal reaction is negative. Such protracted and erratic forms of pneumonia must be looked upon as instances of severe local infection."

Pneumonia as a complication of typhoid fever is rare.

It might be well, doctor, to make a Widal test in some of your atypical cases. Occasionally, as you know, in imperfectly treated cases fever persists for from four to six weeks, terminating with gradual defervescence. Not infrequently septic manifestations are observed. You seem to be in the midst of an epidemic, and it is generally acknowledged that the asthenic variety (socalled "typhopneumonia") ordinarily predominates under such circumstances. The mortality frequently is high.

You need not doubt your thermometers. However, we would urge you to push, in all such cases, calx iodata, calcium sulphide, and nuclein, in massive doses, eliminating freely, and maintaining therapeutic cleanliness of the intestine with the combined sulphocarbolates in doses of 20 to 30 grains every three hours. Candler's article on the treatment of pneumonia, in the January issue of CLINICAL MEDICINE, may interest you particularly under the present circumstances.

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QUERY 5913.—"Popping of Joints." D. S. B., Alabama, tells about a young woman (age, 22; spare-made, in general good health) who experiences a peculiar popping sound in the joints of her right jaw when she opens her mouth and in the joints of her right knee and shoulder and elbow when she moves them. The trouble does not pain her, but it is disagreeable. One can hear the "pop" across the room as if two bones were rubbing against each other. The Doctor wants an explanation and suggestions.

To our knowledge, the peculiar "popping" of the joints here described has never been satisfactorily explained, and the literature at our disposal does not refer to the subject. Presumably the lack of synovial fluid would cause more or less stiffness of the joints, with, possibly, resulting friction-sound. "Popping" is due, probably, to a sudden tightening of relaxed muscles, the joint going back into place under tension.

We are all familiar with the phenomenon of "cracking jaw," and, of course, we all—or most of us—can "pop" our fingers. It is probable that practically the same conditions exists in the joints of your patients, i. e., abnormal relaxation and sudden (spasmodic) tension.

It is altogether likely that exercise of the affected joints, and constant massage with some oleaginous substance (lanolin and coconut-oil, equal parts, for example) would prove beneficial.

As to the pop which can be heard across the room. "as if two bones were rubbing against each other," that sound must be differentiated from "popping." As already pointed out, the lack of synovial fluid, i. e., roughness and friction in the joints, might—probably would in certain spare individuals—produce just such a sound.

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QUERY 5914.—"Parenchymatous Nephritis." I. H. E., Kentucky, has a patient who has been sick for quite a long while. Sometime ago her heart beat as high as 180 per minute. She was very dropsical. Now her heart has compensated, until now it beats only 70 per minute. She still is somewhat ascetic. Her appetite is good, digestion good, she rests well, has no pain, no cough, no difficulty in breathing. The amount of urine (of which a specimen is forwarded) in twenty-four hours is 24 ounces.

This patient suffers from parenchymatous nephritis. Alkaline decomposition has occurred in the sample of urine mailed—please remember that it is well always to add to it a preservative, such as a little chloroform.

The pathological conditions present in the individual may vary materially from day to day. In chronic diffuse parenchymatous nephritis the usual indications are to keep up the patient's strength by improving the quality of the blood and getting rid of the accumulated body waste; while rest in bed, even if not continuous, is of importance in reducing edema.

The patient should be carefully fed, skim milk being the ideal food here. Under its use the most dangerous symptoms frequently abate. She should consume 2 to 3 quarts of milk per day, taking 6 to 8 ounces every two hours, "chewing," so to say, each mouthful

thoroughly. It is advantageous to dilute the milk with Vichy or Seltzer. Buttermilk is also highly recommended. She should wear woolen underclothing, one set during the day and a change at night.

The combination of arsenates of iron, quinine and strychnine with nuclein is essential, two of the standard granules being given after each meal. Usually we add arbutin, boldine, and irisoid, giving full doses before the two principal meals of the day.

The dropsy may be controlled by means of hot baths, laxative salines, and apocynin. The latter may be given for one or two days every week or ten days; i. e., one standard tablet every two hours until free watery stools are secured, the effect being maintained with two tablets every three hours. Blue mass and soda or calomel and podophyllin may be exhibited every third night, and a laxative saline the next morning. Salt sponge-baths are beneficial. In addition, enemata of decinormal saline solution are invariably ordered by this writer. It is well to withdraw sodium chloride from the diet entirely. Cactoid sustains the heart and also acts as a diuretic. With a personal knowledge of actual conditions one can modify this basal treatment satisfactorily.

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QUERY 5915.—"Nodules in the Breast." F. C. S., Illinois, asks what medicinal procedures we would suggest for lumps in the breasts?

The exact character of the "lumps in the breasts" must, of course, be ascertained. If you will give us a clear idea of their character, location, length of time they have been observed, etc., we may be able to make some definite therapeutic suggestions. Are the indurations freely movable or is the overlying skin adherent? What is the general condition of the patient? Has she borne children? They are important factors to know.

Phytolaccoid and irisoid are, perhaps, the most useful and generally indicated remedies, with calx iodata or arsenic iodide as alternates.

As you are aware, different kinds of new-growths are to be found in the breast—some of them benign, some of them doubtful, some of them truly malignant. Fibroma is common, but it is not always easy to differentiate in the early stages from sarcoma; indeed, fibromata, myomata, and sarcomata are closely allied.

Periductal fibromata of the breast are encapsulated tumors, which may vary in size from a bean to a coconut, and most commonly found in women between twenty and thirty. They are painless, grow slowly, and are usually found in the upper outer quadrant of the breast.

Myxomata differ little in structure from fibromata, but are apt to be larger, are observed more frequently in women of middle age, and frequently contain cavities.

Sarcomata (periductal) are most common in women of over forty years who have borne children. The tumors become hard and large, involving the whole breast; they ulcerate, and the overlying skin is reddened and traversed by dilated veins.

Fibrocystadenomata are found in young single women, usually. They are lobular, quite hard and movable, varying in size from that of a walnut to an orange. They grow slowly and cause no pain.

Retention-cysts, tuberculous nodules or mastitis may cause the appearance of "hard lumps."

It must not be forgotten that the first sign of cancer is frequently a painless lump, usually located near the nipple, but occasionally lying high up toward the acilla. Deeply seated small cancers are fixed, cannot be moved. As the disease advances, the skin becomes adherent and pitted, frequently the nipple retracts, and about this time ulceration is apt to occur, and enlarged nodes in the axilla become apparent.

It is essential that malignant growths of the breast be recognized early. The only effective treatment is radical extirpation.

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QUERY 5916.—"Dermatitis Herpetiformis Termination of Pregnancy." K. A. R., Wisconsin, is treating an anemic boy of eight who has a skin eruption which he has diagnosed as dermatitis herpetiformis. The boy has been thus affected since he was two years old. It is worse during summer. Lesions are first vesicular then they generally become papular and finally pustular; they come out in crops of two, three or more, begin in the corium of the skin, are of pinhead size. The parts affected are the hands, arms, legs and feet, also to some extent, the neck and face. There is very little itching. He sleeps well, has a good appetite, bowels are regular. Family history is negative. Urine: no sugar, no albumen, specific gravity 1014, 24-hour output about 40 ounces; reaction, amphoteric; acidity, 25°; no indican.

Treatment so far has been: Internally, Fowler's solution, 1 to 7 drops three times a day after meals; syrup of iodide of iron, 5 drops every three hours; sulphur laxative two to six granules a day. Externally

Alkaline baths once a day; next, after removing crusts and opening vesicles, rubbing in of sulphur ointment (a dram to the ounce). After two weeks there is no change for better or worse.

The Doctor asks: "Would calcium sulphide and echinacea be of greater value internally, and how would lead-water do for external use? I have treated boils with lead-water with good results."

He writes further: "I am also treating a woman who has asthma and tuberculosis, and she is now two weeks overdue in regard to her menses. She thinks she is pregnant. The doctor who attended her at her last confinement told her she could not be able to go through a pregnancy again. At what time is it best and safest to terminate pregnancy and what method is best, safest, and most used? Is there any drug or combination of drugs that are used or can safely be used? Would you advise consultation in such cases?"

We think it would be well to have a specimen of blood from the 8-year-old boy examined by our pathologist. If your diagnosis is correct, you have a troublesome condition to deal with, but itching is usually a constant and most troublesome feature. Pigmentation is sooner or later noted in practically every case.

As you are aware, the vesicles and pustules, especially vesicles and blebs, are somewhat peculiarly shaped; most of them being strikingly irregular, oblong, stellate, quadrate, semilunar, or more rarely, ring-shaped. When drying, they have a puckered appearance. They usually disappear by absorption, unless ruptured extensively; under such circumstances, the lesions secrete for a short time and then dry up; and when the crusts fall off the site is decidedly erythematous and decolorized, this gradually fading away or leaving a slight pigmentation.

Dermatitis herpetiformis is usually seen in young adults, though two cases have been reported in children of thirteen and fourteen years. Nothing of any import in the prior or present condition of the patient's health would explain the eruption; as a matter of fact, in most instances the general health seems to be undisturbed.

Most dermatologists consider the disease as essentially neurotic. Roussel reports a case in which phimosis apparently was the prime cause, prompt cure resulting after circumcision. Renal disease has been recorded as an etiologic factor, and various observers claim that there is invariably an insufficient elimination of urea and uric acid.

In the writer's opinion, the maintenance of intestinal cleanliness and the exhibition of irisoid and echinacoid in alternation with arsenic sulphide proves the most effective medication in these cases. We should be inclined to give also small doses of calomel, and irisoid, half-hourly for three or four doses, every third night, and a saline laxative draught the next morning. Boldine may be advantageously added if the output of urea is insufficient. Arsenic sulphide should be given after the two principal meals of the day.

The skin may be sponged daily with carbolized epsom-salt solution and the lesion dusted with stearate of zinc. Thuja is an excellent application and may be applied to ruptured vesicles on gauze. Dusting powder may be used subsequently. You might try this treatment, which has proven very useful in the writer's hands, and report results. A very careful examination of blood and urine should be made; also examine the genito-urinary organs.

We regret to say that we cannot discuss the second subject of your letter. We have made this a fixed rule, and we are quite sure that you yourself will agree that it is advisable for us to adhere strictly to it. On no account attempt to terminate pregnancy without calling in a consultant. Bear in mind, quite frequently the birth of the child proves beneficial instead of proving disastrous in such cases. Accepted methods of terminating pregnancy are described in all modern textbooks on obstetrics.

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QUERY 5917.—"Diagnosis of Variola." A. B. N., Texas, requests an answer to the following questions relative to the diagnosis of smallpox: "(1) Are there any positive signs or indications to discriminate early the discrete form (accurately, positively) from chicken-pox of an aggravated form or complicated with scrofula; where you have, as in smallpox, first the macules, then vesicles and pustules with umbilication? (2) Does the discrete form protect, or immunize, a person from the confluent, or malignant, form of smallpox? (3) Is it a fact that smallpox is the only disease that presents vesicles upon the palmar surface of the hands and the sole of the feet; and would it be proper to make a diagnosis upon this one point?"

The prodromes of variola and varicella differ materially, although we must remember that a very mild form of variola has been prevalent throughout the country, many physicians, diagnosing "Cuban itch" or "varioloid" eruptions, failing to quarantine.

In varicella, prodromata may be entirely absent, and usually are, although careful inquiry may develop the fact that the child has been constipated, peevish, and inclined to refuse food. Slight headache or malaise, initial chill, and moderate rise in temperature may usher in the eruption; but in the majority of instances the appearance of the typical spots may be the first thing to attract attention. Bear in mind that these spots nearly always appear upon the trunk, being scattered over the chest, abdomen, and back.

The period of incubation is two weeks. The eruption has been known to appear as early as ten days after exposure, while, also, it has been delayed as long as twenty-one days.

At first the papule is small, very slightly elevated and surrounded by an erythematous ring. During the second day it becomes vesicular, each lesion resembling a minute cantharidal blister upon a pimple-base. In forty-eight hours the vesicle sinks and presents a typical umbilicated pock. In another day or two this dries and the crust separates, leaving a white area beneath. Meanwhile other papules have appeared, and so it is possible to find a patient exhibiting at once papules, full vesicles, the umbilicated variety, and dry crusts, and even white spots showing recent separation of the scab. On the face and other exposed areas, vesicles may become infected and pustules result. These heal slowly and leave a typical white depression which closely resembles the "pit" of variola.

Bear in mind that the diagnosis usually rests upon the absence of systemic disturbances, the successive crops of papules, the course of the lesion, and the fact (generally), that the face escapes and the hands and feet are but very rarely affected.

In variola, six to ten days after exposure the patient has chill (or convulsion), followed by high fever and intense pain in head and back. A papular eruption appears on the second day. Vomiting is common. In children, the papular eruption may appear on the buccal and pharyngeal mucosa on the second day.

Ordinarily the temperature at the end of twenty-four hours is 103° to 104° F.; the eruption appearing on the third day or fourth day, when the temperature invariably falls to 100° or 101° F. The eruption appears first upon the forehead and lips, and gradually spreads over the body. The scalp usually escapes; but the hands also may be spared. The eruption becomes papular on the fifth day, and in the rare cases where the temperature has not fallen early it does now; the patient usually feeling comparatively well. Twenty-four to thirty-six hours later the papules become vesicular; umbilication follows rapidly, and pustules are present generally on the eighth day. On the ninth, each pustule is surrounded by an areola, there is swelling of the features, and a stench, which sometimes is intolerable, fills the room. The purulent contents of the pustules oozes forth on the tenth, eleventh or twelfth day. A scab, or crust, now forms, which, if untouched, separates about the fifteenth or sixteenth day, leaving a red, glazed surface, this later becoming a white depressed cicatrix.

However, in these modern days, "pitting" is entirely prevented by the puncture of each vesical as it appears, the removal of its contents, touching of the cavity with pure carbolic acid, and neutralizing the latter with alcohol. Moreover, if the patient is kept saturated with calcium sulphide, and the body freely smeared with carbenzol, antiseptoil or similar antiseptic unguent, the course of the disease is materially modified.

Under the circumstances, we beg to refer you to the chapters on the treatment of variola and varicella in "Everyday Diseases of Children." Let us suggest also that you write the Secretary of the State Board of Health, Springfield, Ill., and ask him to send you pamphlets descriptive of variola as it has appeared in Illinois in recent years.

Variola is variola, and, while we are aware that a patient may contract this disease twice or even three times, such protection as one attack may afford follows the discrete as well as the confluent form. It must be remembered also that individuals have contracted smallpox for the second or even the third time, despite the fact that they had been effectively vaccinated; moreover, the period of immunity varies materially. Experimentation has shown that a certain number of individuals may be successfully vaccinated every two or three years, and instances have been reported where men have contracted smallpox three years after a first attack of the disease, and six months after having been "successfully" vaccinated. It is true, such things rarely do occur; still, we must admit that the susceptibility of individuals varies greatly.

Vesicles rarely appear upon the palmar and plantar surfaces; the covering is naturally thick and tough, and, so, owing to this fact, undermining is a frequent result. There is little or no tendency to umbilication. A vesicular eruption, however, may appear in many other skin diseases.